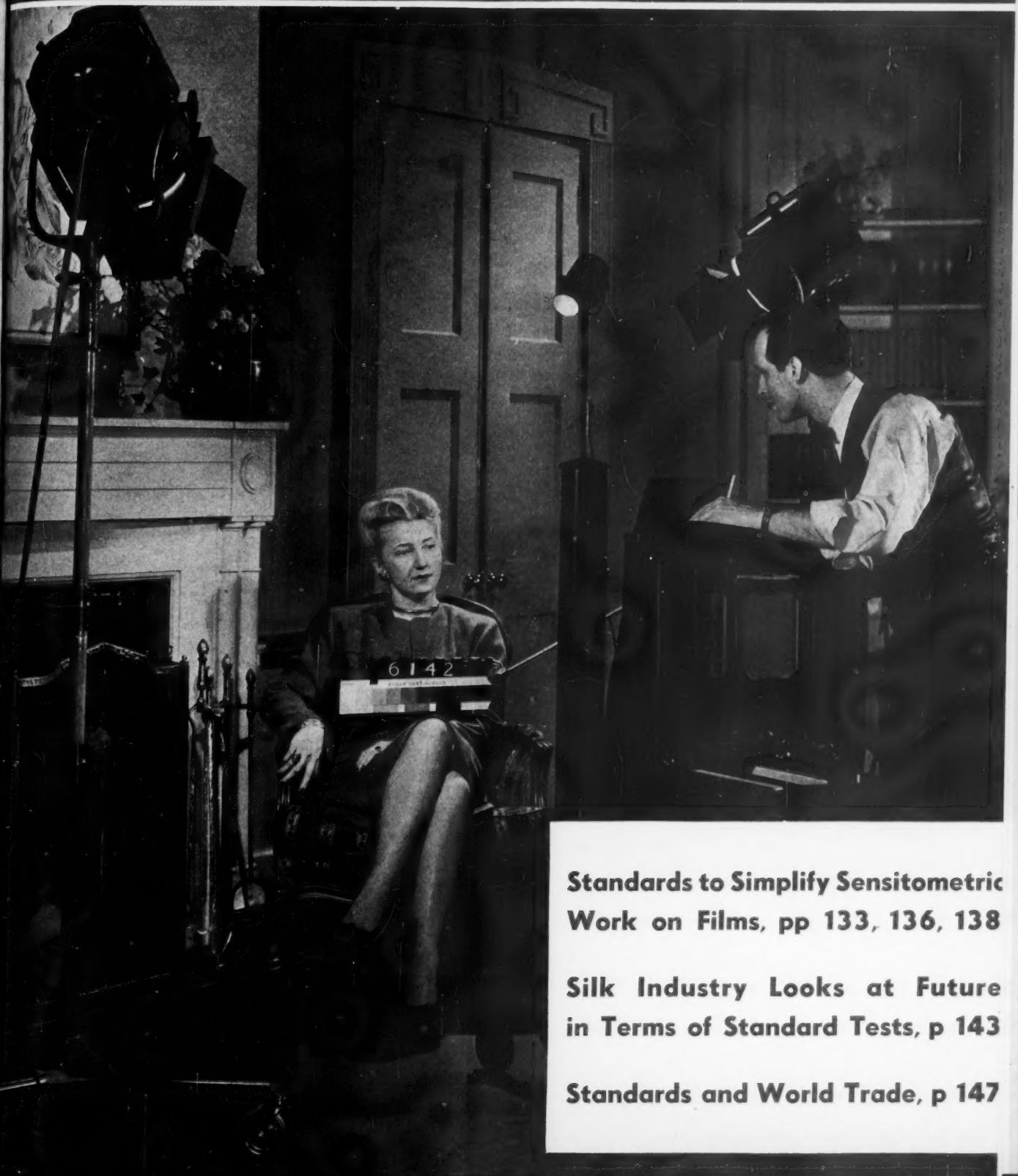
Industrial

June 1946

Standardization



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Some 2000 Industrial concerns hold membership either directly or by group arrangement through their respective trade associations

Readers Write

Statistics Standard Used in Safety Contest

National Safety Council, Hampden County, Massachusetts Chapter

Gentlemen: As we are anxious that every company enrolled in our Industrial Contest should have a copy of the "Method of Compiling Industrial Injury Rates" as approved by the American Standards Association on October 11, 1945 (Z16.1-1945), would you kindly send us 100 copies.

RALPH W. ELLIS,
Executive Vice President

• • The American Standards Association was pleased to send 100 copies of the American Standard Method of Compiling Industrial Injury Rates, Z16. 1-1945, for use in the Hampden County Industrial Contest.

Plan to Use New Plumbing Code

Kansas State Board of Health

Gentlemen: Can you advise when the new ASA plumbing code will be ready for distribution? A number of cities desire to revise their plumbing codes and we would like to refer them to the ASA code.

PAUL D. HANEY
Chief Engineer

• • The completion of this code is still some months away. A draft is in course of preparation, prior to what is expected to be a final ballot in the sectional committee, but it is not known just how soon the code will be ready for circulation.

ASA Information Helps France on Packaging Specifications

Office Professionnel des Industries et Commerces du Bois et de L'Ameublement, Paris

Gentlemen: I wish to thank you for taking the trouble of gathering for me the American specifications for boxes and crates which certainly will prove helpful for the preparation of our own specifications for packaging, to be approved by AFNOR.

JEAN COLLARDET

Michigan Labor Department Uses American Standards

Michigan Department of Labor and Industry

Gentlemen: I sincerely appreciate receiving the informative material you have forwarded. It has become an important and much referred to part of our research library.

FARIS N. COWART
Director, Division of Statistics and Research

Safety Standard Considered In Leasing Tent Equipment

J. L. Stuart Manufacturing Company

Gentlemen: Your fifth draft of the Proposed Standard for Grandstands, Tents, and Other Places of Outdoor Assembly has been referred to us. As we are just preparing a re-writing of our printed instructions covering the leasing of this type of equipment to the Fairs in the western section of the United States, I wonder if you would favor us with a copy of the standard referred to.

J. L. STUART
President

• • A copy of the final draft of the proposed American Standard on Grandstands, Tents, and Other Places of Outdoor Assembly, Z20, was sent to Mr Stuart. However, it was called to his attention that final action has not yet been taken on the standard. It is expected that the standard will be approved within the next few weeks.

American Standards to Aid In Holland's Reconstruction

Shell Development Company

Gentlemen: Would you please send the following standards to Mr W. Westenenk, Wallandlaan 9, Blaricum, Holland:

ASA B16e-1939 (American Standard Steel Pipe Flanges & Fittings)
ASA B16a-1939 (Cast-Iron Pipe Flanges & Flanged Fittings)
ASA B16e5-1943 (Pressure-Temperature Ratings for Steel, etc)
ASA B16a1-1943 (Pressure-Temperature Ratings for Cast-Iron, etc)

These are urgently needed for the construction of essential equipment.

DR A. G. CATTANEO

• • Copies of these American Standards have been sent to Holland. Mr Westenenk is director of the N. V. Comprimo, Consulting Engineers, who specialize in the design and construction of process equipment for the chemical, petroleum, and refrigeration industries. Before the war, they built a large number of Edeleanu refineries in this and many other countries.

Our Front Cover

In this picture a "gray scale" is being used to determine the proper density and contrast of the negative, and thus the amount of exposure needed to produce the desired picture. Standards are now available that will help to bring about a uniform understanding of film speed, sensitivity, and density. (Articles on pages 133, 136, 138.) Photo Courtesy Eastman Kodak Company.

Industrial Standardization

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Contents

June, 1946 Ruth E. Mason, Editor 35 Cents

The American Standards Association is a federation of national groups dealing with standardization. Through it, government, industry, labor, and the consumer work together to develop mutually satisfactory national standards. It acts as the authoritative channel for international cooperation in standardization work.

Subscription price $4.00 per year (foreign $5.00). Special to schools and libraries $2.00 (foreign $3.00). Re-entered as 2nd Class Matter 7/31/43, at the Post Office, New York, N. Y., Act of March 3, 1879.

United States Testing Co

Raw silk bales from Japan, a common sight before the war, are again being delivered to this country. Standard tests, developed on an international basis, check the quality.

Article on Page 143

New Standards to Simplify Sensitometric Work on Films

By M. E. Russell

Three new American Standards clarify and unify terminology and specifications for film speed, sensitivity of photographic emulsions, and film density

IN this issue of INDUSTRIAL STANDARDIZATION three new standards in the field of photographic sensitometry are announced:

Method for Determining Photographic Speed and Speed Number, Z38.2.1-1946 (Revision of Z38.2.1-1943)
Method for Determining Spectral-Sensitivity Indexes and Group Numbers for Photographic Emulsions, Z38.2.4-1946
Diffuse Transmission Density, Z38.2.5-1946

Sensitometry is the branch of photographic science which attempts to measure those characteristics of a film which contribute to photographic quality. The rapidly expanding uses of photography make it imperative that the properties of each film be thoroughly understood. Photographic manufacturers and numerous large consumers for many years have had sensitometric laboratories and systems of testing which have enabled them to obtain data necessary for their particular purpose. Unfortunately, it has been very difficult to impart this information to other people, since there has been no uniform system of measuring, evaluating, and expressing results. The subcommittee of the ASA Sectional Committee on Photography appointed to deal with this phase of photographic standardization has already produced one standard dealing with the measurement of photographic speed of certain types of films. This standard is now being extended to cover additional materials.

Standard on Spectral Sensitivity of Film

Speed is but one of many important characteristics. The sensitivity of a film to light of different colors is of prime importance in many kinds of work. For years the various classes of spectral sensitivity were expressed merely qualitatively by such terms as "ordinary" (meaning the film was sensitive only to blue, violet, and ultraviolet light); "orthochromatic" (meaning film sensitive to green light in addition to blue, violet, and ultraviolet); and "panchromatic" (meaning film sensitive to all colors of light). The introduction of sensitizing of special types, for example, high red sensitive, and the very specialized uses to which film is now often put require a quantitative method of evaluating spectral sensitivity. Also, to be of maximum value, a system of classifying color sensitivity should be one agreed to by all interested users. The article by Dr D. R. White (page 136) describes the standard adopted by the American Standards Association for evaluating spectral sensitivity of film.

M. E. Russell, *Chairman of the Subcommittee on Sensitivity to Radiant Energy, No. 2, of the ASA Sectional Committee on Standardization in the Field of Photography, Z38, is a member of the technical staff of the Eastman Kodak Company and represents the company on the sectional committee.*

Standard on Photographic Density

The measurement of sensitometric characteristics invariably involves the measurement of photographic density, often to a high degree of precision. The value of density obtained on any given piece of apparatus is greatly affected by the optical system and other factors inherent in the instrument. Due to a lack of standardized densitometry, considerable confusion has often resulted from efforts to interchange sensitometric data. The results obtained by the ASA committee in establishing a standard in this field are described by C. N. Nelson and M. H. Sweet in another article in this issue.

Standard on Film Speed

The subcommittee on sensitometry has found it necessary not only to agree upon proper testing technique but to define the characteristics which are to be measured. Far example, the term "speed" has been used in many ways. In some cases speed is considered as the exposure necessary to produce the faintest or "threshold" photographic deposit. Several systems of sensitometry have been built around the idea that speed is to be considered as the exposure required to produce a certain density. In other cases speed has been considered as the exposure sufficient to produce a poor but usually passable picture.

The subcommittee concluded that although each concept of speed was probably useful in some special cases, the normal concept of speed, and the one included in the standard, should be:

> "Photographic speed is to be considered as inversely proportional to the minimum camera exposure which a negative material must receive in order that an excellent print may be made therefrom."

A standard adopted in 1943[1] covered the measurement of speed of roll films, miniature camera films, and film packs. In order to obtain a single number which should have the greatest possible significance and use, the subcommittee adopted conditions for testing which were considered to represent an average of

[1] M. E. Russell, "New Standard Defines ASA Speed for Photography," *Industrial Standardization*, **14**, 268-272 (1943).

actual trade conditions. For example, the film must have aged to a degree typical of that found in practice. The quality of exposing light, time of exposure, and type of developing solution are all precisely specified and are normal in photographic use. The sensitometric criterion adopted for determining speed is based upon elaborate studies in correlating pictures with sensitometric curves and leads to a value which conforms to the above stated concept of speed.

The standard has now been extended to cover the measurement of speed of sheet films and plates of the portrait, press, and commercial classes.

Practical Application of Standard

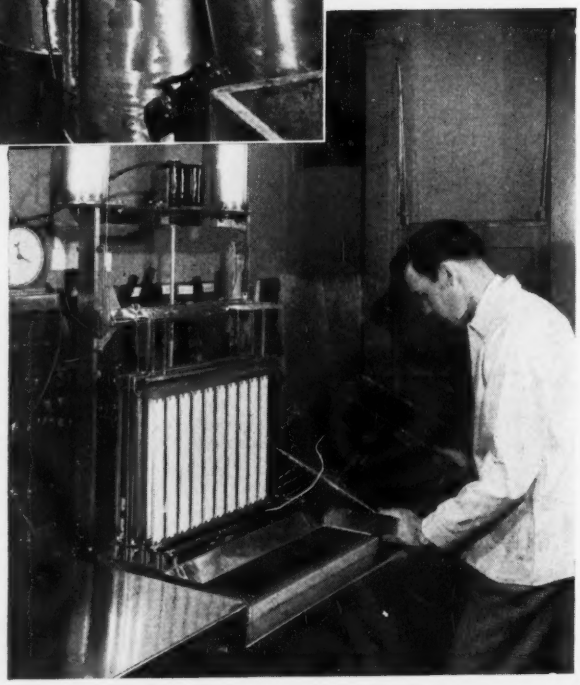
Photographers do not ordinarily plan to give the minimum exposure required to produce a good picture, but prefer to increase exposure somewhat to allow for uncertainties in operation. Values of speed, therefore, need to be modified to include a margin of safety. A quantity called exposure index (or speed number) has been incorporated in the standard, and this exposure index indicates the exposure (that is, illumination multiplied by time) which a film should receive in normal picture-taking practice. The exposure safety factor allowed for in exposure indexes varies somewhat from one class of film to another; hence the ratio of speed to exposure index is not always constant.

From the exposure index the photographer knows the amount of light energy which his film should receive. Since he may find it difficult to estimate the intensity of light coming from the subject to his camera, he is likely to use an exposure meter. The meter, in addition to measuring light, usually incorporates a calculator which makes it easy to combine the measured light value with the exposure index of the film to obtain a proper setting for the camera lens and shutter. It is apparent that if a photographer is to get the maximum usefulness from exposure indexes measured according to the American Standard, the light-measuring component and the calculator of his exposure meter should be so designed and calibrated as to assure that the film will receive the required exposure.[2, 3]

In 1944 the ASA War Committee on Photography and Cinematography, Z52, issued a group of American War Standards[4] covering one type of exposure meter. In this standard an effort was made to specify the performance of meters to such an extent that all meters conforming to the standard would call for the same exposure when used in connection with a given scene and a given exposure index. A special committee of the ASA Sectional Committee on Standardization in the Field of Photography, Z38, is now working on the problem of preparing a standard suitable for peacetime use. The desirability of a standard of this type is obvious.

Kodak Research Laboratories

Chemical solutions used in testing, which are typical of those used in trade practice, are prepared under carefully controlled conditions. Left — the setup for preparing test solutions at one of the large film laboratories.



In a sensitometric testing laboratory, exposed strips of film are processed under controlled conditions to yield a scientific evaluation of the characteristics of the film when used in picture-taking.

Subcommittee Members Generously Gave Time and Effort

At this point a word of commendation is in order for all members of the Z38 subcommittee on sensitometry. Difficulties in the way of preparing suitable standards have been many, but the group was anxious to avoid in America the confusion which prevailed in Europe, with its many speed systems and many meter types. In consequence, considerable time and effort have been spent conducting tests, exchanging data, and pooling ideas and experiences. The committee hopes that its standards will contribute to the greater simplicity and enjoyment of picture-taking.

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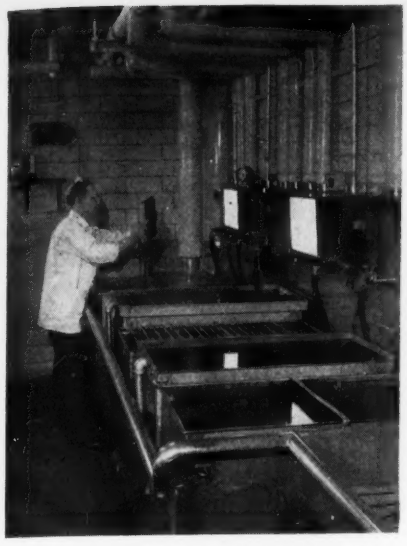
[2] Allen Stimson, "The ASA Exposure Index Numbers", *American Photography*, **40**, No. 3, 14-15 (1946).

[3] R. T. Pierce, "Z38.2.1-1943 and Weston", *American Photography*, **40**, No. 3, 16 (1946).

[4] F. K. McCune, "Industry and Armed Forces Pool Data on Exposure Meters", *Industrial Standardization*, **15**, 173-177 (1944).



Kodak Research Laboratories

A commercial processing laboratory such as this must know how films will behave in practical use. Sensitometric testing by the manufacturer helps to assure the consumer that the film has the required characteristics.

ASA Complimented On Photography Standard

"The American Standards Association is to be complimented upon finally obtaining a standard that all manufacturers of roll films, film packs, and miniature camera films can use for checking the quality of their products. The need for such a standard has been quite apparent to Weston ever since they marketed their first exposure meter in 1932. At that time Weston found no basis for agreement among film manufacturers and, therefore, had to provide its own system of ratings to make a useful exposure meter.

"The ASA standard* provides a method for the manufacturers to use in rating certain of their products and in maintaining them at a definite level of quality. Since this is the starting point from which the sensitized products emanate, the importance of clearing up this part of the procedure is evident."

—R. T. Pierce, Weston Electrical Instrument Corporation

* NOTE: This quotation refers to the American Standard Method for Determining Speed and Speed Number, Z38.2.1-1943 (now available in a revised edition, Z38.2.1-1946).

Photography Committee Has Broad Program

The three new American Standards for determining photographic speed and speed number; for spectral-sensitivity indexes and group numbers for photographic emulsions; and for diffuse transmission density are part of a large program on standards for still photography being developed by the ASA Sectional Committee on Standardization in the Field of Photography, Z38. Seventy-one standards have already been completed. This committee works under the sponsorship of the Optical Society of America, and has a membership that is broadly representative of manufacturers, distributors, and users of photographic equipment, and technical experts in the photographic field. The members are:

Loyd A. Jones, Optical Society of America, *Chairman*
J. W. McNair, American Standards Association, *Secretary*

American Astronomical Society, *Fred L. Whipple*
American Chemical Society, *S. E. Sheppard*
American Committee of the International Congress of Photography, *Walter Clark*
American Geophysical Union, *Comdr G. C. Mattison*
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American Roentgen Ray Society, *Fred O. Coe, MD*
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American Society for Testing Materials, *L. V. Foster; H. E. Seemann (alternate)*
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Film Color Sensitivity Identified

American Standard Spectral-Sensitivity Indexes and Group Numbers specify the color sensitivity of film emulsions and group together films of similar characteristics

By D. R. White

THE new American Standard for Spectral-Sensitivity Indexes and Group Numbers for Photographic Emulsions, Z38.2.4-1946, provides a means for specifying the spectral or color response of emulsions used for general photography in a simple form which, in spite of its great simplicity, conveys significant and useful information.

Specification of a spectral or color sensitivity has been necessary to some degree ever since dye-sensitized negative materials became commonly available. The silver halide emulsions first made exhibited only ultraviolet and blue sensitivity. Thus greens and reds both appeared very dark in the prints of that day. The first extension from this inherent blue sensitivity of the silver halide included only the near adjacent portion of the spectrum, the green region. This was hailed as a great advance, as indeed it was, but promoters or advertisers introduced a name that implied more than had actually been achieved. The name orthochromatic—meaning true color—was attached to emulsions with such sensitivity and this overstatement has plagued the industry ever since. Experience with the orthochromatic (true color) emulsions has shown that they do not live up to their name, as reds are not truly and accurately reproduced, but in general appear much darker in prints than in the originals.

The extension of sensitivity to include the red led to a truer reproduction, but the name orthochromatic, indicating true color, had already been accepted for the more limited range. Therefore, this descriptive name was not available and the term panchromatic—all color—has been generally accepted to describe this newer class of emulsions.

The need for more precise specification of characteristics than that furnished by the two general terms "orthochromatic" and "panchromatic" has long been evident. Individual manufacturers have classified their films under special headings to designate similar spectral sensitivities. Descriptive names, such as "high green ortho" or "high red pan", have been used to subdivide the general realms covered by the two old names.

It is too late to do much to redefine these generally accepted terms. Hence a new approach is required to give the present-day photographer, professional or amateur, a proper and useful indication of the char-

D. R. White, *Laboratory Director, Photo Products Department, E. I. du Pont de Nemours & Company, Parlin, N. J., is a member of Subcommittee 2 on Sensitivity to Radiant Energy of ASA Sectional Committee Z38. He was largely responsible for preparation of the standard on spectral-sensitivity indexes and group numbers.*

acteristics of a specific emulsion out of the wide range commercially available. This new approach has led to the ASA Spectral-Sensitivity Index and ASA Spectral Group Number.

There is no need to go into detail here concerning the methods specified in the standard by which the new classification numbers are determined. The methods require sensitometric tests with a light source and filters of closely defined characteristics. In general, the carefully controlled conditions of a sensitometric laboratory are necessary for the satisfactory determination of the numbers. The standard defines the procedures to be used in a way to insure that different laboratories will obtain essentially the same result. This is, of course, a necessity for any standard. The details are of interest to any one making this type of determination but are of little general interest.

The form of the results, however, is of general interest. The tests specified in the standard yield numbers in two forms, a Spectral-Sensitivity Index and a Spectral Group Number. The index shows the percent contribution of each of three spectral regions, roughly the blue, green, and red regions, and is expressed to the nearest percent as determined by the test of the specific sample. This gives an indication of the relative sensitivity, but, in practice, the degree of differentiation is greater than is required for many purposes. The Spectral Group Number groups or classifies emulsion characteristics within useful tolerances such that, for pictorial purposes, any two emulsions within a group may be expected to show similar relative color response and to require similar filter factors for the more commonly used filters.

Something of the significance of these numbers is most readily demonstrated by study of the five pictures reproduced herewith, all from one subject. The color of the original salad ingredients will be readily visualized as a foundation for study of the pictures resulting with the five negative film types chosen. The following descriptive terms, ASA Spectral-Sensitivity Indexes, and ASA Spectral Group Numbers characterize the films used:

Picture No.	*Description*	*Index*	*Group Number*
1	Blue Sensitive	100-0-0	00
2	Orthochromatic	89-11-0	20
3	High Green Orthochromatic	68-32-0	50
4	Panchromatic	59-28-13	66
5	High Red Panchromatic	41-37-22	77

Even with a quick glance at the pictures one clearly recognizes that there are differences in the results. With further study these differences can be traced in detail. The carrots range from nearly black to light gray. The beets never get as light as the carrots, but still are several tones lighter in picture 5 than in picture 1. The tomatoes follow the carrots in general behavior, though showing somewhat more pronounced highlights due to the smoothness of their skin. The green peppers, nearly black in 1, become gray in the rest, but do not show as extreme change as the carrots. The table top itself was the neutral tone of stainless steel. The salt shaker had a bright red plastic top. One cabbage was "red". The greens of carrot tops and pea pods may be studied to the limit of recognition from the reproduction.

E. I. du Pont de Nemours & Co

Similar reproduction could be expected from other brands of film, if they were of the same Group Numbers. No system of the past has permitted exactly this discriminatory grouping.

Beyond the descriptive information conveyed by these numbers, there is still another use which should develop. From the study given during the development of the standard it appears that it will be possible to use one table of filter factors for films of one Group Number for the filters commonly used with that film class. The adoption of the standard is too recent to show the benefits from this step as yet, but it is a predictable and thoroughly possible development which, when achieved, will simplify the form and facilitate the use of important photographic data.

New Transmission Density Standard Basis for Photography Measurements

First national standard for transmission density provides standard for uniform laboratory practice; will be important in checking film density and calibrating instruments

By C. N. Nelson and M. H. Sweet

SINCE the early days of photography the measurement of "optical density" has been of great technical value. Transmission density is one form of optical density and is often spoken of simply as "density". It is commonly used as a measure of the ability of negatives and positives to decrease the intensity of light passing through them.

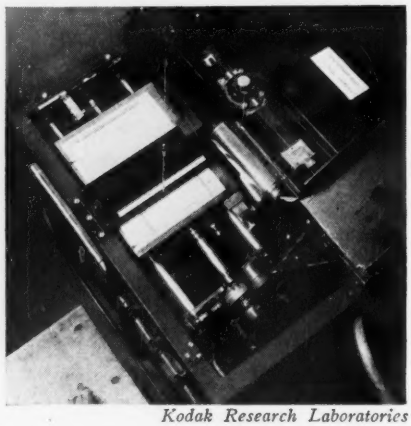
The newly completed American Standard for Diffuse Transmission Density, Z38.2.5-1946, should play a useful part in scientific and practical work in optics and photography. It was sponsored by the Optical Society of America and was prepared by the ASA Committee on Photography. Representatives of the National Bureau of Standards, the Armed Forces, principal manufacturers of photographic materials, exposure meters, and optical equipment, and others concerned, agreed upon a specific definition for this type of density and approved detailed methods for its measurement.

There are at least three immediate benefits from this standard:

1. The cause of confusion in discussing and using the term "diffuse density" has been eliminated—a carefully developed, precise definition has been standardized.
2. For the first time, manufacturers of densitometers are able to calibrate their instruments to agree with standard values.
3. The sensitometric characteristics of photographic films and plates can be expressed in terms of densities which will be the same from laboratory to laboratory. (The new density specification has already been incorporated as part of the American Standard for measuring film speed.)

The concept of density is not confined to black-and-white silver images, but may be applied to any radiation-absorbing media such as color filters, carbon particles in gelatin, dye images in color photographs, etc. The present standard, however, is intended primarily for black-and-white photography.

The use of densitometers is increasing in almost all branches of photography. In Fig. 1 is shown a modern photoelectric densitometer which can make 25,000 density measurements a day, the density values being recorded automatically on graph paper. This type of densitometer, being automatic, is expensive and is used only where a great volume of work is required. Efficient nonautomatic densitometers of nominal cost — both photoelectric and visual types—are available commercially and are in common use. One of the photoelectric-type densitometers is shown in Fig. 2.



Kodak Research Laboratories

Fig. 1 — This modern automatic photoelectric densitometer can make 25,000 density measurements a day.

Some of the most important characteristics of films and plates are expressed by means of a curve showing the density of the developed image plotted against log exposure. The study of tone reproduction in pictures is greatly aided by a knowledge of the densities in the negatives and positives. Precisely reproducible density measurements are important in photographic photometry such as that done in spectrum analysis and in astronomy.

In view of the widespread use of density and densitometers in scientific and practical work, it is obviously desirable that there be agreement on the definition of density and its method of measurement. This is especially true since there are a number of ways of measuring density, many of which lead to different results.

***C. N. Nelson,** Kodak Research Laboratories, and **M. H. Sweet,** Ansco Research Laboratories, are both members of Subcommittee 2 on Sensitivity to Radiant Energy of the ASA Sectional Committee on Standardization in the Field of Photography, Z38, and were primarily responsible for the drafting of this standard.*

General Definition of Density

Density is defined in general terms in the standard as "the common logarithm of the ratio of the incident to the transmitted radiant flux".

This is in agreement with the general definitions of transmission density given repeatedly in the literature —often in the form of equations such as the following:

$$D = \log\left(\frac{P_i}{P_t}\right)$$

where

D = density
P_i = intensity of the incident radiation
P_t = intensity of the transmitted radiation

or

$$D = \log\left(\frac{1}{T}\right)$$

where

D = density
T = transmission

These definitions serve only as a starting point in a complete specification of density.

Density, as defined above, is not a fixed value for a given sample, but depends upon the *geometry* and the *spectral* characteristics of the optical system in which the sample is placed.

For example, some negatives may have high effective densities when used in a specular-type, condenser enlarger, but when these same negatives are contact printed their effective densities may be lower by 30 percent or more because of the more complete collection of the light scattered by the silver image. Similarly, negatives stained through development with pyro or p-phenylene diamine may have low densities when examined visually but high effective densities when printed on ordinary photographic paper.

No single way of measuring density can cover all practical cases. This important fact is recognized throughout the standard and considerable space is given to explaining and classifying the various types of density found in practice. From variations in the geometry of the optical system alone, three distinct types of transmission density are obtained:

Diffuse
Doubly Diffuse
Specular

For a typical photographic negative film, doubly diffuse density is only slightly higher than diffuse density, while specular density is considerably higher than either of the other two.

The mode of illumination and collection used in measuring these three types of density is illustrated schematically in Fig. 3.

Diffuse density was chosen for detailed specification in the standard, in preference to doubly diffuse or specular density, because it is widely used in calibrating densitometers and in expressing the characteristics of photographic materials. Also, it agrees approximately with the effective densities found in much of the practical work. It should always be kept in mind, however, that in specific practical cases the effective density of a given sample may conform to any one of the above-mentioned types of density or it may fall somewhere between them.

Ansco Research Laboratories

Fig. 2—This photoelectric-type densitometer makes it possible to take readings in terms of American Standard Diffuse Density.

The density of a sample used in a condenser-type enlarger is often assumed to be specular density. However, it rarely approaches true specular density because the light source is usually broad and the light falling on the sample is semi-diffuse. The effective density is, in fact, sometimes nearer to diffuse than to specular density. Flare light in the enlarger also causes the effective density to be lower than specular density.

In contact printing with a small source of light, the effective density of a negative is usually very close to diffuse density. Many contact printers, however, use several lamps or a broad diffuser between the source and the negative. The density is then increased and it may approach doubly diffuse density.

If a photographic transparency is placed on an opal glass illuminator and viewed, its effective density is very nearly equal to diffuse density although slight discrepancies occur owing to reflections between the film and the opal glass and to lack of perfect diffusion in the opal glass.

The accumulated research of many people over a number of years has been a necessary forerunner of the present standard. It was important to discover why various densitometers gave different results even when they were supposedly designed to measure the same type of density.

The research gradually explained most of the discrepancies. It was found, for example, that integrating sphere and opal glass methods gave different values for diffuse density largely because of reflections between the sample and the opal glass. A useful discovery was that the results could be brought into agreement by means of fixed conversion data. The diffusion characteristics of the sphere and the opal were found to require certain specifications. The sizes of the cone angles subtended by the lenses or receiving elements were shown to be important. The use of a cover glass in making contact prints was found to introduce interreflec-

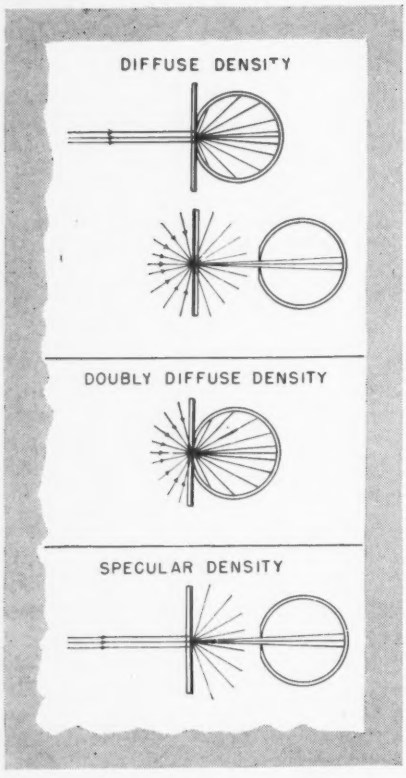


Fig. 3—Geometric Types of Density

Method of illumination and collection used in measuring the three types of density.

tions which caused discrepancies between densities measured by the integrating sphere method and those measured by the contact printing method.

Experience showed that the precise measurement of a given type of density is not a simple matter. Many precautions must be taken in the details of the technique and equipment. The definition itself requires elaboration if unique values of density are to be specified.

Definition of American Standard Diffuse Density

Diffuse density is defined in the standard as the density which is obtained from the general definition when the following conditions are fulfilled:

(*a*) The incident radiant flux shall be normal to the sample and *all* of the transmitted flux shall be collected and equally evaluated; or the incident flux shall be perfectly diffuse and only the specular component of the transmitted flux shall be collected and evaluated.

(*b*) The effects of reflections between the sample and the diffuser shall be negligible.

(*c*) The effects of stray radiation shall be negligible.

The term "American Standard diffuse density" applies to densities determined by the particular methods and apparatus which are specified in the standard for meeting the conditions of the above definition.

This term also applies to densities obtained from any densitometers which have been designed or accurately calibrated so as to give values in agreement with the standard.

Methods and Equipment Specified in the Standard

The standard brings into harmony three different practical methods which have been proposed for the measurement of diffuse density. If the prescribed technique, equipment, and conversion data are properly used, these three methods give identical results within the limits of small experimental errors.

One method is based on the use of an integrating sphere.[1] This is a fundamental method and the values obtained do not need to be corrected. Fig. 4 shows schematically how this method operates in conjunction with a polarization photometer. The photometric inverse square law may be used as a substitute for the latter and a photoelectric receiver may replace the eye if the appropriate spectral conditions are met.

The second method involves the use of specified opal glass characteristics. It is a very compact and convenient method. The readings must be corrected by given amounts before they conform to the standard.

The third is a contact printing method[2] and the values obtained do not require correction. It involves the comparison of contact prints made by exposure with, and without, the specimen covering the print material. Fig. 5 is a schematic diagram of the apparatus.

Spectral Conditions

Fortunately, the spectral conditions used in measuring the density of black-and-white films developed in nonstaining developers ordinarily are not critical. However, when the sample material is a color filter, a dye image in a color photograph, or a black-and-white film developed in a staining developer, the density varies considerably with the wavelength of light and it is necessary to specify the spectral conditions precisely in order to obtain unique values of diffuse density.

The standard outlines a systematic classification of the various spectral types of density found in practice and shows how identifying code letters and numbers may be assigned to each, but it does not define all of these in detail.

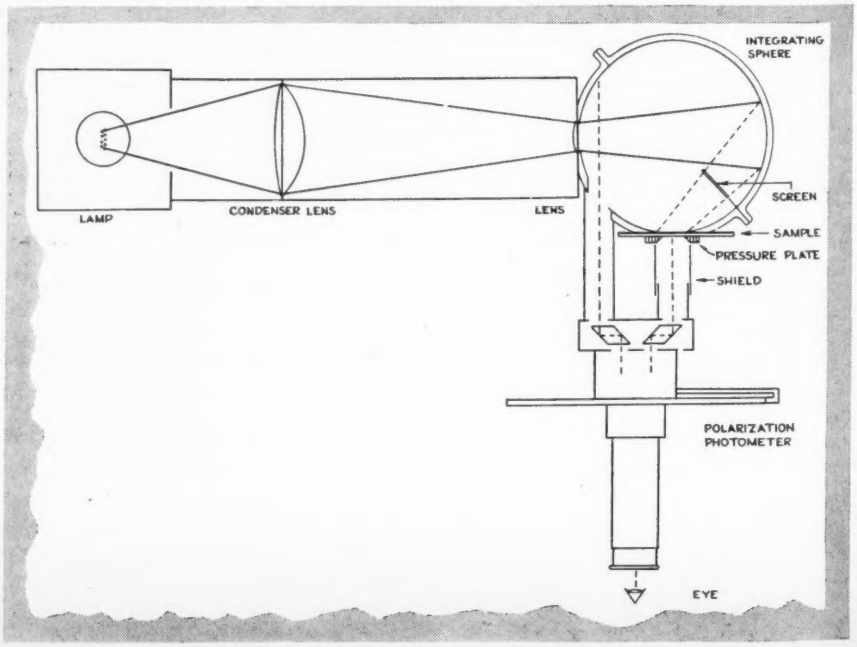
The standard specifies in detail the two spectral types of American Standard diffuse density which are of

[1] C. Tuttle and A. Koerner, *Journal of the Society of Motion Picture Engineers*, **XXIX**, No. 6, 622 (Dec 1937).

[2] M. H. Sweet, *Journal of the Optical Society of America*, **33**, 143-163 (March 1943).

Fig. 4—Integrating Sphere Method

This fundamental method operates in conjunction with a polarization photometer and the values obtained do not need to be corrected. A photoelectric receiver may be used.



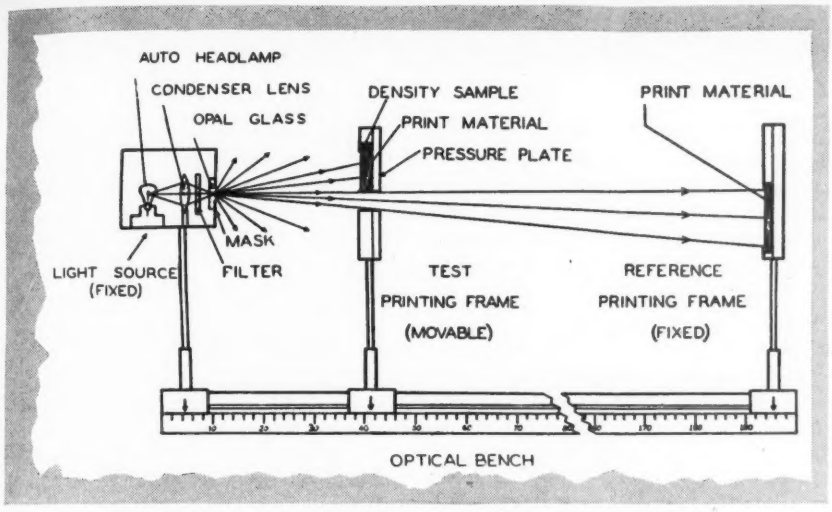


Fig. 5—Schematic Diagram of the Printing Apparatus

The contact printing method of measuring diffuse density shown here involves comparison of contact prints made by exposure with, and without, specimen covering print material.

greatest interest at the present time:

American Standard diffuse visual density

American Standard diffuse printing density

The mode of illumination and collection is the same for both cases. Only the spectral attributes differ. For visual density the illuminant is a tungsten lamp at a color temperature of 3000 K and the receiver is a normal human eye or has a spectral sensitivity equal to that of the normal human eye. For printing density the illuminant is the same but the receiver has the spectral sensitivity of a typical, semi-orthochromatic photographic printing paper.

Photoelectric cells or tubes can be used in determining visual or printing density if suitable filters are used in combination with them.

Calibration of Densitometers

Virtually any type of densitometer can be calibrated (or recalibrated) to agree with the standard for any given kind of film. A different calibration may be required if the type of film or development is changed. If the densitometer conforms to the standard in its spectral characteristics and in mode of illumination and collection and has been calibrated to read accurately for one type of film, it will read correctly for all types of film regardless of their grain size or color.

Technical Experts Prepare New Standards

The technical subcommittee on Sensitivity to Radiant Energy, Subcommittee 2 of the ASA Sectional Committee on Standardization in the Field of Photography, Z38, did the work of drafting the three new standards on speed, sensitivity indexes, and diffuse transmission density. Members of the committee, who worked as individual experts on the subcommittee, are:

M. E. Russell, Eastman Kodak Company, *Chairman*

R. C. Axon, Photo Products Department, E. I. du Pont de Nemours & Company (Inc)

Walter Clark, Research Laboratories, Eastman Kodak Company

Raymond Davis, National Bureau of Standards

John Dessauer, Haloid Company; Eugene C. Fuerst (alternate)

R. E. Farnham, General Electric Company

W. N. Goodwin, Jr, Weston Electrical Instrument Corporation

F. K. McCune, General Electric Company

C. N. Nelson, Research Laboratories, Eastman Kodak Company

Brian O'Brien, School of Optics, University of Rochester

Lt V. R. Pieronek, Photographic Science Laboratory, Naval Air Station, Anacostia, D.C.

M. H. Sweet, Research Laboratories, Ansco; M. Anderson (alternate)

E. D. Tillyer, American Optical Company

D. R. White, Photo Products Department, E. I. du Pont de Nemours & Company (Inc); Emery Meschter (alternate)

L. E. Howlett, Optics Section, National Research Council (liaison)

The three new standards can now be obtained from the American Standards Association:

American Standard Method for Determining Speed and Speed Number, Z38.2.1-1946 25¢

American Standard Method for Determining Spectral-Sensitivity Indexes and Group Numbers for Photographic Emulsions, Z38.2.4-1946 40¢

American Standard for Diffuse Transmission Density, Z38.2.5-1946 50¢

Lighting Handbooks to Use Standard Abbreviations

All abbreviations in the new Lighting Handbook, now being prepared by the Illuminating Engineering Society for release in October 1946, must conform to the American Standard on Abbreviations for Scientific and Engineering Terms, Z10.1-1941, the IES announces.

The book will be divided into two parts—one, the reference division, covering the fundamentals of light; the other, the application division, covering design and application.

ASA Engineers Speak on Safety

. Henry Lamb, safety engineer of the American Standards Association, spoke on the recent revisions in the American Standard Method of Compiling Industrial Injury Rates, Z16.1-1945, before the Automotive Section of the 21st Annual Western Pennsylvania Safety Engineering Convention and Exhibit April 24.

D. F. Hayes, safety engineer, American Standards Association, was the speaker at the April 24 meeting of the Hampden County Safety Council, Springfield, Massachusetts. Mr Hayes discussed how to use the American Standard Method of Compiling Industrial Injury Rates and what effect the recent revision of the code may have on its use.

Wine Institute Recommends Standard Definitions

To protect the consumer against spurious wines, the Wine Institute has recommended nationwide adoption of uniform wine definitions and standards in the individual states.

ASA Activities Described in Year Book

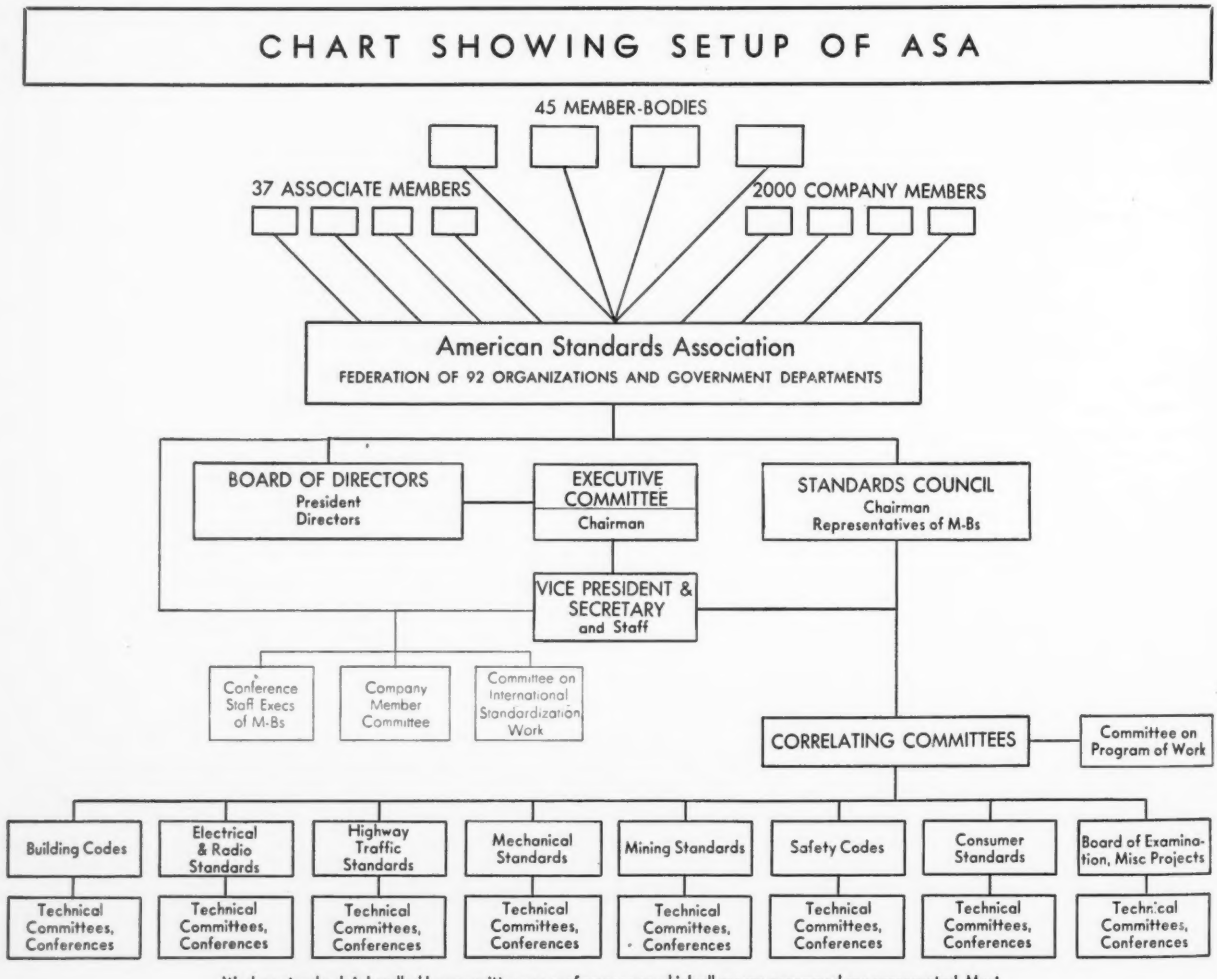
AS standardization is a dynamic process fostering interchangeability of parts, economies of manufacture and use of products, and better understanding between buyer and seller, so the American Standards Association is a dynamic force toward the achievement of that standardization. *Ready* to serve in peacetime, the ASA has proved itself *well able* to serve in wartime.

Its actual accomplishments during the war period, as well as its setup for continuing activity during peacetime, are now condensed and published in the 1945-46 Year Book, available to all who are interested in a concise report on ASA activities. All projects now going forward through the procedure of the ASA are included in the Year Book, together with lists of the committee members working on the development of standards. A complete index makes it easy to locate approved American Standards or proposed American Standards in process of development.

The names of all Member-Bodies, Associate Members, and Company Members, as well as names and addresses of important individuals connected with the work of the ASA, are listed. The Year Book also explains the theories behind the workings of the ASA and tells how the Association operates. The Association's role in the realm of international cooperation and its relation to other governmental, trade, and technical agencies in the field of standards are described.

An organization chart, reproduced below, is a particular help in analyzing the structure of the American Standards Association.

Copies of the 1945-46 Year Book may be obtained from the ASA at its offices in the Grand Central Terminal Building, 70 East 45th Street, New York 17, N. Y.



Work on standards is handled by committees or conferences on which all groups concerned are represented. Most of the committees work under the leadership (sponsorship) of one or more of the organizations chiefly concerned.

The 45 Member-Bodies and 37 Associate Members of the American Standards Association are national trade associations, technical societies, and Federal Government departments. All Member-Bodies are represented on the Standards Council, which has charge of the work on standards—making final decisions on approval of standards, initiation of projects, membership of committees, and approval of sponsorships. Members of the Board of Directors are nominated by the Member-Bodies selected in rotation. Correlating Committees are general industry committees which supervise the work in specific fields, subject to approval of the Standards Council. The sectional committees working under them must be representative of all groups concerned with the subject of the standard—manufacturers, distributors, consumers, government, and labor. There are now some 1000 sectional committees and technical subcommittees.

Silk Industry Looks at Future In Terms of Standard Tests

By D. E. Douty

THE credit of initiating raw silk testing belongs to Italy since the first public conditioning house for determining the weight of raw silk at a fixed moisture allowance was established at Turin in the spring of 1724, 222 years ago. The idea spread to the textile centers of Europe, until in 1914 there were 41 public textile laboratories operating as neutral agencies for service to buyers and sellers.

The forerunner of the United States Testing Company, Inc, which corresponds to the European conditioning houses, was established in New York in 1880 by two French silk men, Poidebard and Muzard, at a cost of $1,467.00 for apparatus and $345.00 for furniture and fixtures. For 30 years the laboratory had a fitful and unstable existence, often surviving only through the financial assistance of a few progressive and generous supporters.

Then, in the early spring of 1913, the silk manufacturers of Paterson, N. J., at that time looked upon as the "Lyons" of the United States silk industry, organized a Silk Convention. A small group of technically minded persons, after considerable discussion, finally persuaded the Convention Committee to devote one session to the discussion of raw silk testing and grading. From a scientific point of view it was a simple program, but it developed substantial interest and some adverse discussion. The group of raw silk inspectors, mostly experienced in European or Oriental markets, and who had special gifts of sight, feel, smell, etc by which they judged raw silk and selected it for particular purposes, were inclined to be cynical regarding the possibility of grading raw silk by "mechanical tests".

Mr Sakalavala, New York Manager of Tata & Company (later Hara & Company), was so much impressed that he offered the Silk Association of America $1,000.00 for prizes in a Silk Essay Competition upon the testing and grading of raw silk. The competition was held in May 1914.

The Paterson Technical Session and the Essay Contest served to bring into the open a substantial number of technical men, working silently in the laboratories of their employers and very little known to the industry.

The Silk Association of America selected a Raw Silk Classification Committee of eight, which held its first meeting June 29, 1915.

A survey was made of laboratories engaged in the testing of silk, and advice and assistance was sought from the technical men available in the New York market.

Newspaper reports that the first shipment of raw silk received from Japan since the end of the war has been tested at the United States Testing Company add particular interest to this analysis of how the silk industry reached international agreement on standard tests and a standard classification system. The article tells something of the problems now facing the Japanese silk industry as observed by Mr Douty in a recent visit to Japan.

Mr Douty is president of the United States Testing Company and has long been interested in the consumer standards program of the American Standards Association. He was a member of the ASA Sectional Committee on Principles Underlying Valid Certification and Labeling of Commodities, Z34, from 1937 until early this year.

This paper was presented before a meeting of the American Association of Textile Technologists March 6.

Opening a 135-lb bale of raw silk preparatory to testing it according to international test methods described here.

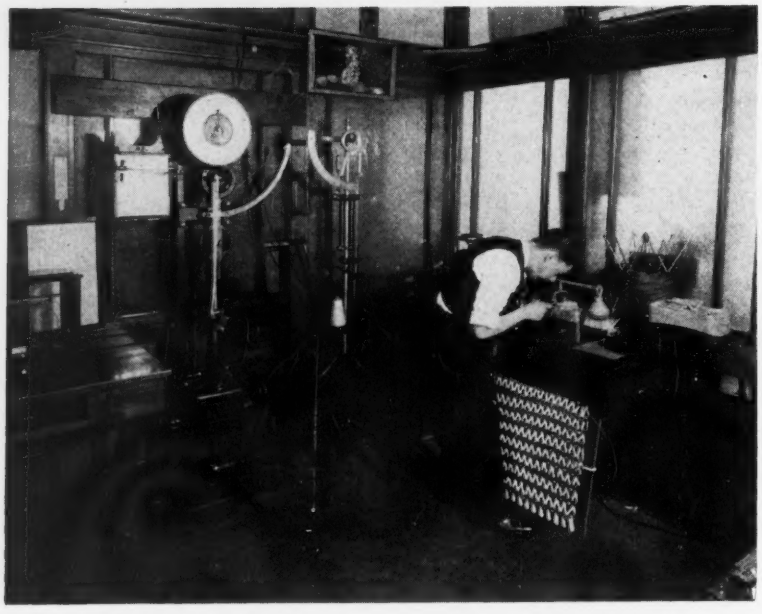
Keystone View Co

Raw Silk Being Weighed

Estimates indicate that there are now about 50,000 bales of tested and graded raw silk in Japan that are available for export.

Keystone View Co

Some manufacturers of silk textiles have their own testing laboratories, such as the typical silk-testing laboratory shown below. New methods of marketing and improvement in silk quality are now needed to meet the competition of synthetic fibres.



At that time raw silk was bought by undefined grade names, such as Double Extra, Extra, Best One to Extra, No. 1, and by Chops, such as Pheasant, 2 Irises, 3 Irises, etc, according to the lithographed picture on the Chop tickets.

Opinion Widely Diversified in 1915 and 1916

The meetings of the committee during 1915 and 1916 revealed a very wide divergence of opinion within the committee regarding the essentials of classification. Aside from the European methods of testing and inspection, numerous special tests were being used. Naturally, each member considered his methods the most satisfactory and was quite unwilling to discard them without definite evidence to show something better.

Six years were devoted to collecting, compiling, and interpreting data and in 1921, almost six years to the day, the committee submitted reports on

(*a*) Standard Tests for Raw Silk
(*b*) Tentative Standard Tests for Raw Silk
(*c*) Tentative Classification for Italian, Japanese, and China Steam Filature Raw Silk
(*d*) Specifications for American Standard Silk Skein.

The standards consisted of

(1) Definitions
(2) Sampling
(3) Winding Test
(4) Sizing Test (450 Meter)
(5) American Sizing Test (225 Meter).

The tentative standards, which were new, consisted of

(1) Gage Test
(2) Serimeter Test for Evenness
(3) Serigraph Test
(4) Cohesion Test.

The tentative classification was based upon these tests. This was the first attempt to base a system of grades of raw silk upon defined tests. The Board of Managers were shy and only "Resolved, That the Board of Managers . . . do hereby *receive* the three reports of the Raw Silk Classification Committee . . ."

The committee itself inserted in its tentative classification the following limitation: "No attempt is made to establish any relation with the present market Classification and it is not intended that this Tentative Classification shall apply to sales contracts under the Raw Silk Rules and Regulations of the Silk Association of America unless specifically included as special conditions of the Sales Contract."

Beginnings of Japanese-American Cooperative Classification Efforts

Numerous conferences were held with Mr Akira Shido, vice president of the Raw Silk Association of Japan, who came to New York in 1918 as Commercial Attaché and in July of that year published and distributed a pamphlet entitled, *The Classification Problem of Japanese Raw Silk.* Upon his departure for Japan, the Silk Association of America handed him a copy of resolutions, suggesting that the Japanese Government, the Raw Silk Association of Japan, and the Sericultural Association of Japan send representatives to America in order to cooperate with the Raw Silk Classification Committee of SAA.

As a result, the Japanese set up an extensive Joint Committee of 30 members which began meetings in January 1919, and later established an excellent technical committee to conduct research and correlation work. This committee organized and, in the years that have passed, has made outstanding contributions to raw silk technology.

After three years of trial and individual study of the American Classification Committee's first "Reports", the committee was reorganized and expanded. In October 1924, it resumed formal meetings. Its second report was issued two years later. This report was revised by a Joint Committee of the Silk Association and the National Raw Silk Exchange, Inc in 1929 and was given official status by adoption by the Board of Managers of both organizations. It still stands as the American Method and is entitled, "A Raw Silk Classification with Methods of Testing".

Following an International Technical Conference of the Japanese and American technical representatives in Yokohama in 1928, the Japanese published *Standard Methods of Testing Raw Silk* in 1929, revised it in 1931 and 1935, and issued, in 1938, the edition which is now official in Japan.

To correlate the large volume of research being conducted in both countries during the last period, a Second International Technical Raw Silk Conference was held in New York in the fall of 1929. Delegates were present from Canada, China, England, France, Italy, Japan, and the United States. The proceedings were published in a volume of 526 pages.

The American Committee was again reorganized into a Joint Committee on Classification, sponsored by the Commodity Exchange, which consisted of the Raw Silk Trade Group National Association of Hosiery Manufacturers, and the National Federation of Textiles, Inc (successor to Silk Association of America).

Further International Standardization Uncertain

The progress reports of this Joint Committee, issued in 1934 and 1938, contain the latest and most advanced results towards international standardization. The international differences are not very great, but conditions are such in Japan that it is doubtful if research work can be resumed for several years and the vast changes which have taken place in the American textile industry since 1938 are such as to make the support of further research in America in connection with silk, uncertain.

While in Tokyo, I came into the possession of the Italian - German Classification for raw silk, dated 1943, issued by National Federation of the Silk Industry, of Italy.

It is patterned after the American and Japanese methods.

This is only a very sketchy outline of one of the outstanding examples of industrial standardization carried on over a period of about 25 years by the silk industry of the United States without any assistance whatever from the United States Government and in cooperation with the silk industry of Japan.

Notwithstanding the criticism of standardization by industry by Carroll L. Wilson in his report to the Secretary of Commerce on the activities of the National Bureau of Standards and the American Standards Association, September 1944, the Secretary of Commerce Conference on Standards in New York, January 1945, and the report of the resulting Policy Committee on Standards under Charles E. Wilson, of General Electric Company, we have not only an outstanding example of standardization by an industry but of international standardization by an international industry.

"Where Do We Go From Here?"

But—"where do we go from here?"

For nearly five years raw silk has been out of the American mills, substitutes have been accepted and utilized, the pride of artistry, which until very recent years was the driving force in silk manufacture and sale, has vanished and there are very few, if any, American manufacturers who could be interested in supporting experimentation and research for the advancement of raw silk.

Therefore, with the return of raw silk to the American market, any efforts to promote its use, to improve and expand its products, and strengthen its competitive position must come from the Japanese.

What is their present condition technologically?

The Yokohama and Kobe Conditioning Houses are not damaged but are completely dismantled. The splendid building in Yokohama is occupied as quarters by 2,000 American troops and a portion of the smaller, but equally fine, building in Kobe is partially occupied as quarters for the 33rd Division of our army, the balance for troop recreation.

From the Yokohama laboratory equipment, a branch laboratory was installed at Maibashi in Gumma Prefecture and another at Okiya in Nagano.

From Kobe, a small branch was established at Kyoto and a larger one at Kanegawa over on the West Coast. None of these branches are equipped with temperature or humidity control, and standard tests, such as winding, tenacity, elongation, cohesion, etc, cannot be made. All commercial or industrial laboratories, including laboratory apparatus and supplies manufacturing plants in the industrial cities along the Eastern Coast, are destroyed.

I was able to visit the business districts of only Tokyo, Yokohama, Osaka, and Kobe but I understand from numerous sources that the business and industrial sections of every village or city of 10,000 or more inhabitants are destroyed.

The great industrial districts, 18 miles between Tokyo and Yokohama and of about the same distance between Osaka and Kobe, including the cities, are barren wastes of corrugated iron, blackened masonry, twisted structural steel, and hundreds of gaunt, towering chimneys marking the graves of Japan's proud industries, developed during the past 75 years.

Her raw silk productive capacity as of December 1945, was about 15 percent of that of 1940; cocoon-reeling capacity is only 9 percent of 1940, and her cocoon production is about 30 percent.

Many of the overseers and technicians have disappeared, thousands of reeling girls must be trained, and the human side of the industry must be completely reorganized and possibly democratized.

To recover even a part of the former American market and meet the competition of synthetic fibers, several reforms are absolutely necessary.

New Developments Proposed for Japanese Silk Industry

Among these are:

(*a*) Revision of the methods of marketing their product both in Japan and abroad, so as to eliminate irresponsible speculation and violent price fluctuations, must be accomplished and made permanent. American manufacturers and importers have often suffered large losses due to sudden fluctuation caused, at times, entirely in violation of the economic law of supply and demand, by interests entirely outside the raw silk industry.

During the past ten years marketing methods, introduced by synthetic yarn producers, have stabilized synthetic yarn prices, have removed yarn-price hazards for the manufacturers, and have made permanent a policy which was one of the chief contributing factors, in the years before the war, to the substitution of synthetic yarns in place of raw silk.

(*b*) The quality of raw silk must be improved. The superior evenness, cleanness, and winding of synthetics make them more desirable to the American manufacturers and affect the appearance and serviceability of the product. It behooves the Japanese to undertake, at as early a date as possible, a complete and thorough engineering study of their entire industry. It has been recommended to them that they seek the services of several of the outstanding industrial engineers in Japan, or even from abroad, and not limited entirely to textile engineers, to conduct an engineering study directed to improvement and to the increase in efficiency and economy of operation. Raw silk production and export is so vital to Japan's economy that such an undertaking would merit the support of the Japanese government.

(*c*) Complementary to the engineering study of production, the Japanese should begin at once a scientific, technical study of the products into which their raw silk is manufactured. One of their largest

volume losses before the war was in the knitting industry. The causes of those losses are well known. The elimination of some of the raw silk defects which determine serviceability, a searching study for new yarn and fabric constructions, and broad research into the art of finishing, giving attention especially to the wide variety of new finishing materials introduced into the textile field in the past five years, should lead to such improvement in silk-knitted products, especially hosiery, as to make it possible to compete on a quality and durability basis. Silk, to survive, must compete with its rivals at all levels on a quality rather than a price basis.

(*d*) Finally, especially in the present emergency conditions, the prospective customers for raw silk must be assured of a continuing supply of raw silk if they are to return to their former silk numbers or anticipate the introduction of new silk numbers into their lines.

There are now available in Japan approximately 50,000 bales of tested and graded raw silk available for export. It is estimated that during 1946 about 100,000 additional bales, for which they will have inadequate facilities for testing, will be available, that the production in 1947 will be approximately 170,000 bales and that, unless unforeseen economic causes intervene, Japan will produce about 200,000 bales in 1948.

Such a program will require technological skill and training in nearly every branch of science and engineering.

The Japanese are a very industrious, virile, adaptable people. It will be interesting to see if in the rehabilitation and reconstruction of their national economy they can muster technological personnel capable of securing the survival of one of their greatest industries in competition with powerful and resourceful rivals.

Notch Sensitivity Requirements Now in Ship Plate Specifications

Specifications for ship plate in the past have not included a determination of notch sensitivity, but such a determination has now been recommended for inclusion in future specifications for assemblies containing structural or geometric notches and residual stresses of high or unknown magnitude, reports the *Technical News Bulletin*, published by the National Bureau of Standards.

This action is the outgrowth of extensive work carried on by the Navy Board of Investigation, which was appointed in January 1943 to inquire into the design and methods of construction of welded steel merchant vessels. Prior to World War II, small naval vessels had been successfully fabricated by welding. During the war, however, attempts to introduce the same method into the manufacturing of larger ships encountered serious difficulties.

The Board, working in conjunction with the metallurgical laboratories of the National Bureau of Standards, was requested to determine whether the failures were the result of inadequate design, improper welding, or defective ship plate. Two lines of investigation were to be followed: (1) to determine why the cracks started; and (2) to find why the cracks, once started, might or might not progress almost instantaneously all the way around the vessel.

Defective design and defective welding were evident causes of some of the failures, particularly those noted in the early stages of the investigation, the *Technical News Bulletin* continues, so measures were taken to correct the design and to provide closer supervision and inspection of the welding operation. However, in many cases the design was adequate and the welding was satisfactory, but cracks still appeared and were sometimes long and serious. In no case was the steel defective, according to the usual specifications, inspection, and acceptance tests. The only property of the steels that appeared to be directly related to the ready propagation of cracks was the Charpy impact value; plates in which the fracture originated and progressed were notch sensitive, i.e., had low impact values, whereas plates in which the fracture stopped were not notch sensitive.

Proper welding and proper design should minimize the occurrence of cracks, and the use of steel that is not notch sensitive should prevent the few cracks that will form in spite of all reasonable precautions.

International Conference Revises Cotton Standards

Proposed revision of the present universal standard for the grade of American upland cotton has been approved by the International Universal Cotton Standards Conference.

Meeting at the Department of Agriculture in April, the representatives at the Conference agreed that such action would provide better yardsticks for measuring the grade characteristics of the cotton crop than the grade boxes now in use.

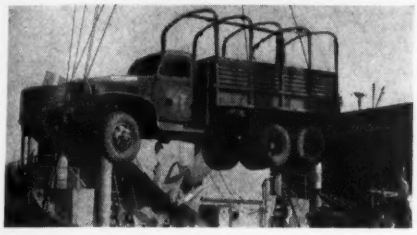
These revisions will include the same number of grades as those which have been in effect since their original promulgation in 1935. However, one additional descriptive grade, strict low middling gray, will be added.

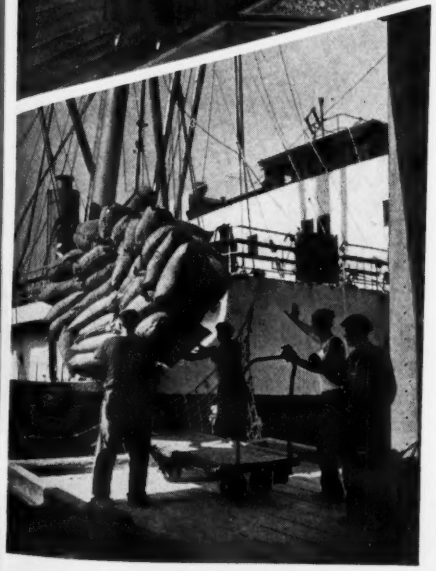
The Cotton Standards Act provides that any change in the standards shall be announced at least a year in advance of the effective date. Therefore, the revised standards when promulgated are expected to become official during the summer of 1947, prior to the 1947-48 cotton season. Meanwhile, after promulgation, they may be used permissively in purchases and sales of spot cotton (not in futures contracts calling for delivery before the effective date of the revision), when definitely specified and understood by buyers and sellers.

Wood Pole Standard Increases Use of Larch Wood

The cutting of larch in national forests of the northern region has shown a marked increase recently, as indicated by statistics recently reported in the *American Lumberman*. From 2.9 percent—the total cut of all sawlogs in 1940—the rate has soared to 21.9 percent—the current figure.

Perhaps a partial cause of this rapid increase is the fact that the American Standards Association has approved the American War Standard for Specifications and Dimensions for Wood Poles—Miscellaneous Conifers, O5.7-1945, which includes this species. As a result, huge stock piles are being used by the Rural Electrification Administration as transmission line poles. Until now, larch has been chiefly employed in framing and concrete forms.





Coordination of terminology and test methods, now being undertaken by United Nations Standards Coordinating Committee, would contribute to better international understanding and trade

By Herbert J. Wollner

Standards and World Trade

WHEN they provide true solutions to existing trade problems, international standards cannot but help to reduce trade frictions between countries.

Trade between nations in the earliest days was largely trade in agricultural products and in raw materials dug from the earth or hewn from forests. Quality concepts and recognition of similar values were not too strong, nor was it necessary that they should be. Materials of production were cheap and plentiful and the needs to which they were put were largely nondiscriminating.

Today, international trade conditions are quite different. We hear talk about balanced trade far more than we did years ago. We are impressed with the fact that trade in its balanced state redounds to the good of the entire world community —and underlying all this we recognize the increasingly important place that manufactured goods take in this trade. This kind of a trade, to be successful, requires a mutual understanding of the other fellow's wants and needs, a mutual desire to satisfy adequately those wants, and finally, the ability to do so.

Can you satisfactorily trade with a man who does not understand you? Will he appreciate what is required of him in order to satisfy your wants? Will he recognize the degree to which he has to refine his processes and, so to speak, hew to the line in manufacturing, in assembling, in providing you with those physical things which you are entering the world market place to purchase? Or would you, on the other hand, prefer to deal in a world where there is competent understanding with respect to the basic requirements of manufacturing processes, and where the critical tolerances, details, dimensions, and compositions which are involved in a smooth-flowing industry are understood by everyone concerned?

A supplier separated by thousands of miles from a purchaser can only make "good delivery" when both agree upon the methods by which his products will be examined and tested,

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NOTE: This article is abstracted from a paper presented at the April meeting of the American Association of Textile Technologists.

Pictures: Charles Phelps Cushing, U. S. Maritime Commission.

and the standards against which they will be compared.

There are, however, further angles to international standardization which transcend the mere capacity for someone to make "good delivery" of exportable goods. Let me refer to a small item which appeared in the United States Department of Commerce publication, *Foreign Commerce Weekly*, some months ago. It related to an inquiry from two South American countries looking for an American manufacturer capable of supplying lamps previously made by Germany and Japan. Dotted over these two South American countries in offices, factories, and homes are electric light fixtures today which American lamp bases will not fit. This is an interesting story. Before the war Germany sold electric light fixtures in South America in which German lamps would fit but American lamps would not. On the other hand, German lamps would fit American-type sockets, a mere matter of dimension and design, but very, very clever.

Treaties Not the Only Way To Control World Market

It is not always necessary to control a world market through treaties. Treaties can be broken, can be torn up; but if a lamp socket is to be ripped out of the wall a large expenditure of time and money is required. It is not quite as simple as tearing up a piece of paper.

And again there are customs barriers.

The Customs Courts frequently are asked to rule upon questions of definitions, where a manufacturer in a foreign port, on order by an importer here in America, has shipped merchandise under the impression that it falls within certain tariff clauses or paragraphs because these paragraphs have been so interpreted in that foreign port. The merchandise arrives here; the word usage is far different from what it is abroad; and lo and behold, whereas the merchandise meets the definition as interpreted in Europe, or in Egypt, or in Australia, or in the Argentine, it is quite another thing here. Who is right? Everyone is right, of course, and universal understanding of what the words mean which are written into the tariff and customs acts of the world is the only basis upon which this continuous litigation can be avoided.

It is this universal lack of agreement which the United Nations Standards Coordinating Committee is set up to correct.

International Association Formed After Last War

After the last war, in the middle twenties, an international association was formed, with headquarters in Switzerland, for the purpose of facilitating the setting up of international standards. It was largely under the aegis of technical men, and any industrial interest behind it was spotty. As a matter of fact the two large world trade nations, Great Britain and America, were not overly energetic insofar as their respective commercial interests were concerned. Not so, however, the central European powers. They early displayed a keen interest and quickly let their influence be felt.

There seems to be a general tendency at the present time to believe that the Fascist countries attempted to employ the International Standards Association as a tool to further their aggressive interests. The impression obtains that in the absence of strong counterinfluence by America and Great Britain, Italy and Germany did succeed in holding great sway in this organization. With the coming on of the recent war it was, of course, necessary for the International Standards Association to be put in a state of suspense. Its activities and functions were taken over by neutral Switzerland, which attempted during the period of the war to maintain its pulse, albeit in a quiescent state.

During the war, specifically in 1943, Great Britain, the United States, and Canada were confronted with simple problems of unifying their military production. Lack of uniformity in the myriad minor details of dimension and composition imposed difficulties in coordinating manufacturing, the cost of which has variously been estimated in the hundreds of millions of dollars. To meet this emergency, it was decided to set up a temporary committee. Thus the United Nations Standards Coordinating Committee came into being. It opened its offices in June 1944. Its primary function at that particular time was to facilitate the prosecution of the war by providing an agency by means of which standards insofar as they affected the war could be adequately and expeditiously handled. It was also recognized at that time, of course, that such a committee might undertake to facilitate the transition in the immediate postwar period, and through an understanding of the nature of the problems involved to provide a springboard by means of which future steps toward international standards could be taken. This committee was not limited to the three organizing powers, but its facilities for collaboration were immediately extended to all the United Nations. A large number of countries signatory to the United Nations agreement indicated the desire to collaborate, and international standardization as an adjunct to the war effort came into vital and active being. It was recognized early that this newly created committee could only be considered a strictly temporary body and that when the war was over the groundwork would have to be laid for a permanent and adequate international organization.

International standardization now obviously is coming of age. It is no longer considered to be the "ivory tower" creation of scientists and technical men completely divorced from any needs of reality. It is now recognized as a necessary tool of trade, manufacture, business.

Up to date the following 17 countries, through their national standards bodies, have joined the committtee:

Australia	China	Mexico
Belgium	Czechoslovokia	Netherlands
Brazil	Denmark	New Zealand
Canada	France	Norway
Chile	Great Britain	Poland
South Africa		United States

At a meeting in New York, October 8 through 11, 1945, the United Nations Standards Coordinating Committee took the first steps in setting up a permanent international standards organization. In taking these steps it has been the view of the Committee that in the postwar world the international aspects of standards are going to be of far greater importance than formerly, and that, accordingly, the permanent institution must be more strongly organized and more amply financed and staffed than was the old International Federation of the National Standardizing Associations (ISA).

This preliminary work included preparations for a world-wide conference of the national standards bodies to be held in London to consummate the formation of the permanent organization. The work of the October conference also included the drafting of a proposed constitution to be submitted to the London conference

for final action; the formulation of recommendations in regard to various matters necessary to the setting up of a permanent organization; and discussions with existing international bodies concerned with standards. It is proposed that the new body shall be called "International Standards Coordinating Association".

Anytime you enter into a compact for the purpose of setting up a standard, you lose something. You lose something which hitherto you may possibly have considered important. You lose it purposely, willfully, and with forethought in order to get something which you consider more important than the thing which you are about to give up. It is just like trading; in trading you give up and you get. The thing you give up you need less than the thing you get. The other fellow gives up something which he believes he needs less than the thing he is going to get. This applies to standardization, whether it is on a national level or on an international level.

Development of individuality, be it in character of personality or of product, can and usually does result in distinction. When being different from others in your community causes you to lead an unsuccessful life, however, your distinction is a hardship and a loss to you. Similarly, if manufacturing some oddly dimensioned, or compounded, product causes you to lose your market, then this distinction should be traded in for a more acceptable, a standard, model.

The United Nations Standards Coordinating Committee has now been advised by the American Standards Association that, on behalf of its entire membership, it is proposing to the world at large that methods for testing textiles be standardized on an international level. Specifically, it has presented some 94 at-present-existing American standard procedures and has proposed them for international discussion, consideration, modification where called for, and, apparently it trusts, for adoption. The United States today enjoys a preeminent position in the world affairs especially with respect to textiles. The standards to which its level of living has compelled manufacturers to produce their wares have been so high that they have been broadly recognized as desirable levels from utility and other points of view. The program which the American Standards Association now presents is the largest proposed project yet submitted. Its scope is to cover the "coordination of national standards on methods of testing textiles based on the following standards that are generally accepted and used in the United States." [The list of standards includes methods of test for shrinkage, colorfastness, bursting strength, laundering, fastness to heat, as well as many others developed by the American Society for Testing Materials, the National Bureau of Standards, the American Association of Textile Chemists and Colorists, and the National Association of Finishers of Textile Fabrics. A complete list can be obtained from the American Standards Association.]

These 94 separate and distinct methods have now been presented for the first time to provide a common language in the interests of a healthy and enhanced international trade. When one considers the universal character of textiles and the fact that they are constructed to satisfy fundamental human needs, it is rather surprising that no far-reaching international agreement on test methods has been developed before this. Textiles are a major item in international trade.

The world is now entering upon a new era in textiles and their manufacture. New synthetic fibres are continually being announced. New methods for processing the older natural fibres are being developed. The control of quality which will obtain in future textile manufacturing will make past and present controls seem crude. It stands to reason that if a manufacturer and exporter in one country, selling his fabrics in many parts of the world, must subject his product to test methods that differ from place to place, he will run up against a severe technological barrier. That is where standards—and the technologists—come in. Agreement on methods of establishing good delivery in shipments of textiles is obviously desirable and essential to free, smooth-flowing, streamlined trade. In setting up international standards with respect to textile test methods, there was no implication that standards of quality would be set up. Indeed, it would appear from the technical advances that have been announced that the future world buyer of textiles will have a complete and almost unlimited range of qualities from which to choose. Qualities of character built into fabric will presumably be under such specific control that the buyer will be able to choose that particular combination that precisely suits his needs and the needs of his community. To be able to obtain satisfactory delivery after his precise specifications have once been set, however, universal agreement on a method of test must previously have been developed.

International Meetings in July, October

The Council of the International Standards Association and the Executive Committee of the United Nations Standards Coordinating Committee are planning to hold meetings at Paris, France, in July. P. G. Agnew, vice president and secretary of the American Standards Association, who is the United States member of both committees, is planning to attend. A plenary meeting of both the International Standards Association and the United Nations Standards Coordinating Committee will then be held at London in October. It is expected that plans will be completed at this meeting for winding up the affairs of both organizations and for setting up a permanent international standards association.

The International Electrotechnical Commission has also scheduled a meeting of its Council at Paris in July, at which time the relation of the IEC to a permanent international standards organization will be considered. The status of the work of the national committees will also be studied and plans for the future program of the IEC will be taken up. E. C. Crittenden, assistant director of the National Bureau of Standards and president of the United States National Committee of the IEC, and L. F. Adams, a member of the committee, will attend the meeting.

News from other countries

British Clothing Committees Agree On Standard Size Designations

A system of sizing nomenclature for women's blouses and all types of underwear was recently agreed upon by the clothing committees of the British Standards Institution. A decision on sizing designation for dresses has been deferred, but it is generally believed that the same designation will be chosen as for blouses and underwear, the BSI announces. It is expected that the system may soon be adopted throughout the trade, since both distributors and garment makers seem convinced that there is a definite need for a uniform British Standard, the report declares. In fact, the trade attaches considerable importance to scientific sizing of garments, it says. Next to cutting and styling, accurate sizing is believed to be an excellent selling factor in the export market as well as in simplifying trade at home.

The preparation of clothing standards is a new activity for the British Standards Institution, which before the war was largely concerned with setting standards for the heavy industries and for metal and timber. However, the newer textile and clothing sections have been particularly active during the war. When the Institution drew up the draft lingerie, blouse, and dress specifications, in cooperation with the industries concerned, it initiated a new practice in the textile field in Great Britain.

Apart from nomenclature, several technical committees of the British Standards Institution are also investigating the number of sizes to be included in a universal clothing standard. The draft specification for underwear, for example, suggests as many as 12 sizes for each garment. While this may be a highly overestimated figure, there is likely to be a vast improvement over prewar custom, especially in women's underwear where the number of sizes was generally much too few, according to the announcement.

Swedish Designers Use Standardization

A general trend in Sweden toward "a much softer and more graceful standardization" than the so-called modern decorating of America was commented upon by Elsa Gullberg, Sweden's foremost textile designer, in a recent interview with a representative of the *New York Herald Tribune*.

The designer's son, also prominent in the decorating field, is responsible for new furniture made of Swedish birch and operating on the "build-your-own-piece" principle. The units are turned out in related sizes, making many of the parts interchangeable. One piece—a rolling cart with drawers of different depths—turns into equipment for a work project, cocktails, or breakfast in bed.

South Africa Plans National Laboratory

Plans of the newly established South African Council of Scientific and Industrial Research for the formation of a national physical laboratory are well-advanced, according to a statement by the president-elect. This laboratory and others which will be created as the need arises are to work with the Standards Bureau Laboratories in major testing and research problems. The Council has agreed that this continuous development and improvement of South African resources is most essential to economic progress. Since industry has a definite place in any such undertaking, the Federated Chamber of Industries has been requested to aid in the project.

Mexican Safety Official Studies American Standards

For his study of safety regulations and standards in the United States, Mr Guillermo Torres Torija of the National Department of Labor, Mexico, visited the offices of the American Standards Association last month. Mr Torres is chief of the Section of Inspection, Education, and Publicity for Industrial Safety of the Mexican Labor Department. He is responsible for the enforcement of safety regulatians and the promotion of safety standards through educational classes, publications, motion pictures, and other methods. In addition to his work with the Department of Labor, he has taught classes in industrial safety in cooperation with the Institute of Social Security.

Mr Torres is in the United States for six months' study of industrial safety methods and administrative practices, on a grant awarded by the Division of Labor Standards, U. S. Department of Labor, in cooperation with the Interdepartmental Committee on Scientific and Cultural Cooperation of the Department of State. During his visit, Mr Torres will study methods of enforcing industrial safety regulations, inspector training, and accident prevention education techniques for workers and management.

AMG Makes Metric System Standard in Korea

The adoption of a metric system of weights and measures has been ordered by the American Military Government authorities in Korea. In a statement carried by the *New York Herald Tribune*, it was announced that this action has been taken to replace an outmoded system which combined American, Japanese, old Korean, and Chinese units. The metric system is now the official standard system used in China.

New Standards from Other Countries

THE following new and revised standards, received recently by the American Standards Association from other countries, may be borrowed by ASA Members from the ASA Library or purchased through the Sales Department.

Drafts of standards from other countries are not for sale. They may be borrowed.

Australia

Drafts of Proposed Standards

Concrete in Building, Code for, (Draft Revision), No. CA2

Oxide Coating of Ferrous Metals in Aqueous Solutions, No. CK3

Great Britain

Drafts of Proposed Standards

Copper for Electrical Purposes—
Bars and Rods, CH(NF)4447
Commutator Bars, CH(NF)4448
Sheet and Strip, CH(NF)4446

Dimensions of Instrument Jewels, (Draft Revision of BS904:1940), CH(ME)4113

Insulated, Asbestos Roved Flexible Cords for Use in Situations Where the Temperature is High, CH(EL)4092

Nesting Chairs for School Halls, CH(BS/MOE)3923

Non-Reinforced Diamond Dies for Wire Drawing, (Draft Revision of BS1168:1944), CH(ME)3594

Rest Beds for Schools, CH(BS/MOE)3919

Terms and Sizes of Printers Cards and Blanks, CH(PRM)3988

Wrought Steels Schedule, (Final Proof of Revised BS970), CH(IS)3426

Codes of Practice

The following codes have been published by the BSI for the Codes of Practice Committee for Civil Engineering, Public Works and Building and Constructional Work formed under the aegis of the Ministry of Works:

Code of Functional Requirements of Buildings—Chapter I(B), Sunlight, CP5:1945, 25¢

Code of Functional Requirements of Buildings—Chapter I(C), Ventilation, CP6:1945, 25¢

Code of Functional Requirements of Buildings—Chapter VII (F), Provision of Artificial Light, CP7:1945, 75¢

Draft Codes of Practice

Cement Bitumen Mixtures for Flooring (Tentative), CP(B)543

Painting, Staining, and Varnishing Wood and Treatment with Preservatives, CP(B)542

New Zealand

Doors, War Emergency E106, February 1946, Amendment 1

Foreign Language Standards

The following standards are available solely in the language of the country issuing them. Only the titles have been translated into English.

France

D32-629, Économie domestique: Appareils de cuisson, chauffage, éclairage, et réfrigération—Elements marmites encastrées et indépendantes fonctionnant au gaz

D64-301, Ameublement—Chassis de sommiers en bois

E16-008, Horlogerie—Horloge à ressort moteur remonté par un petit moteur d'induction

E62-033, Tours semi-automatiques à tourelle révolver—Série normale des diamètres de passage de barres

E62-110, Machines à fraiser: Accessoires—Plateau circulaire

E62-111, Machines à raboter—Rainures longitudinales de la table

E62-112, Tours verticaux—Alésage du plateau

E62-113, Machines à meuler: Vitesses de rotation et dimensions des meules

E62-114, Machines à meuler: Fixation des meules

E62-115, Machines à meuler: Carter de protection des meules avec buse de captation

Matériel de transport ferroviaire:

F01-019, Règles d'établissement des dessins de commande de roues—Pièces mi-finies (dimensions minima)

F01-023, Roues—Pièces mi-finies—Tolérances

F01-024, Roues—Pièces finies—Tolérances

F10-001, Tampons plongeurs à ressort en volute—Pièces constitutives—Tolérances

F20-008, Chaudières—Tolérances

F20-009, Chaudières—Plaques AV et AR de boîte à feu, plaques tubulaires de boîte à fumée—Tolérances sur plaques calibrées

F20-010, Chaudières—Plaques tubulaires et AR de foyer en acier—Tolérances sur plaques calibrées

F20-011, Chaudières—Plaques tubulaires et AR de foyer en cuivre—Tolérances sur plaques calibrées

F20-012, Chaudières — Excédents de matière et tolérances aux bords des tôles de boîte à feu (acier) et tôles de foyer (acier ou cuivre)

F20-013, Chaudières—Cadre de bas de foyer—Tolérances

F20-014, Chaudières—Siphon Nicholson—Tolérances sur pièce calibrée

F20-015, Chaudières — Dômes — Tolérances sur pièces calibrées

F20-016, Chaudières—Fixation sur le châssis—Tolérances

Matériel ferroviaire en général:

F20-017, Tampons autoclaves—Ensembles

F20-018, Tampons autoclaves 47 x 65 à portée plane ou à portée cylindrique—Corps

F20-019, Tampons autoclaves 56 x 83 à portée plane ou à portée cylindrique—Corps

F20-020, Tampons autoclaves 85 x 110 à portée plane ou à portée cylindrique—Corps

F20-021, Tampons autoclaves 120 x 150 à portée plane ou à portée cylindrique—Corps

F20-022, Tampons autoclaves 150 x 200 à portée plane ou à portée cylindrique—Corps

F20-023, Tampons autoclaves—Étriers

F20-024, Ouvertures pour tampons autoclaves

F20-025, Tampons autoclaves et ouvertures pour tampons autoclaves—Tolérances

H15-001, Emballages en papiers et cartons—Dimensions des boîtes pour cartes pour boutons

J22-002, Construction navale: Pressions de service et Pressions nominales—Tableau général de correspondance

J22-010, Construction navale: Brides rondes—Gabarits

J61-101, Construction navale: Tubes de fumée pour chaudières cylindriques

K11-11, Documents bancaires: Warrant commercial

M03-001, Combustibles solides—Méthode d'échantillonnage

M03-014, Combustibles solides—Détermination des teneurs en carbone total et en hydrogène

M30-001, Combustibles solides pour Gazogènes mobiles ou semi-fixes à régime variable—Calibrage du bois

Bâtiment: Menuiserie:

P23-421, Bâtis intérieurs à imposte

P23-432, Chassis, croisée à la française, croisées composées sans meneaux, à double feuillure, type 32/51

P23-433, Chassis, croisée à la française, croisées composées sans meneaux, à double feuillure, type 37/61

P23-434, Chassis et imposte à soufflet à double feuillure type 32/51

P23-436, Croisée à 3 ou 4 vantaux ouvrants à meneaux à double feuillure type 32/51

P23-437, Croisée à 3 ou 4 vantaux ouvrants à meneaux à double feuillure type 37/61

P23-438, Croisée à 2 vantaux à meneau à double feuillure type 32/51

P23-439, Croisée à 2 vantaux à meneau à double feuillure type 37/61

P26-407, Bâtiment—Quincaillerie: Serrures à mortaiser, verticales

P26-408, Bâtiment—Quincaillerie: Serrures de sureté à mortaiser, verticales à 24 variures minimum

P26-409, Bâtiment—Quincaillerie: Serrures pênes dormant et demi-tour à mortaiser universelles

Q13-002, Papier—Caractéristiques des catégories de papiers pour condensateurs électrolytiques

Q13-003, Papier—Caractéristiques des catégories de papiers pour condensateurs statiques

Q32-002, Papier—Spécifications concernant les rouleaux de papier kraft gommé

T30-001, Peintures—Terminologie

T30-011, Peintures—Dosage de l'extrait sec dans les vernis, peintures et préparations assimilées

T30-012, Peintures—Dosage des cendres fixes dans les vernis, peintures et préparations assimilées

Coonley Heads Industry Council To Advise Specifications Board

AN Industry Advisory Council which will serve in an advisory capacity to the Federal Specifications Board has been newly organized under the chairmanship of Howard Coonley, chairman of the Executive Committee of the American Standards Association. Announcement of the new Advisory Council was made by Secretary of the Treasury Vinson, who explained that through the advice of the Council the Government expects to gain the viewpoint and technical participation of industry in developing Federal specifications which conform both to its own requirements and to industrial practice. The Council provides an effective medium for bringing together the mutual interests of the Government and industry and for keeping the Government informed of new developments, improved practices, and manufacturing processes, the Secretary said.

The Federal Specifications Board, in cooperation with the Standards Branch of the Procurement Division, prepares purchase specifications for supplies used by the Federal Government. It is composed of representatives from ten Government agencies.

The proposed charter for the Advisory Council specifies that the functions of the Council, at the request of the Federal Specifications Board, will be:

"(a) To advise the Board on any matters of general interest involving Federal specification, both as they may affect procurement operation, manufacturing processes, and industrial practices.

"(b) To advise with and recommend to the Board specific policies, procedures, and technical matters in order to reflect good commercial and engineering practices.

"(c) To consider problems involving, but not limited to, quality and performance requirements, inspection and test methods, production, supply, and distribution of materials and equipment.

"(d) To consider any technical and manufacturing problems affecting industry and industrial suppliers, as they may pertain to procurement activities of the Federal government.

"(e) To bring together the mutual interests of the Government and industry on standardization, and inform the Board of new developments, improved practices, and manufacturing methods."

The members of the Council have been chosen for their outstanding contributions in the field of industrial standards and specifications, Mr Vinson declared. Those who will serve with Mr Coonley are:

P. G. Agnew, vice president and secretary, American Standards Association
C. L. Warwick, secretary, American Society of Testing Materials
Thomas Spooner, manager, Engineering Laboratory & Standards Department, Westinghouse Electric Corporation
Vincent dePaul Goubeau, general purchasing agent and director of materials, Radio Corporation of America
Harold S. Osborne, American Telephone and Telegraph Company
Warren N. Watson, secretary, Manufacturing Chemists Association
Clarence L. Collens, National Electrical Manufacturers Association
L. A. Danse, Society of Automotive Engineers
C. B. LePage, American Society of Mechanical Engineers.

Gallogly and Spence Become New Members of ASA Engineering Staff

A. R. Spence

F. J. Gallogly

The American Standards Association, in keeping with its policy of increasing expansion, welcomes the addition of two new staff engineers —Francis J. Gallogly, who will assist in the work on various electrical projects, and Arthur R. Spence, who will work on projects in the mechanical engineering department.

Mr Spence comes to the Association with many years of valuable experience behind him. He entered upon active duty with the U. S. Army in 1942, when he was assigned to the Industrial Division of the New York Ordnance District. During that time he held various assignments, all of which were concerned with the inspection and production of precision instruments for artillery fire control.

Prior to his service with the Armed Forces, he was employed as a chief inspector for the New York Ordnance District; an engineer in the Chelsea Elevator Company, charged with the design and production of elevator equipment; and a member of the engineering department of the Columbia Broadcasting System.

Mr Gallogly entered the electrical engineering field in 1940 when, following his graduation from Manhattan College, he became affiliated with the Ingersoll-Rand Company as a pump engineer. In 1941 he joined the Navy Department as a project engineer specializing in the design and installation of electrical systems and equipment. He continued in this capacity until his recent connection with the ASA. During this time he also acquired his certificate in marine engineering from New York University.

ASTM Committee Meetings

In addition to the 23 formal technical sessions which are part of the program for the Forty-ninth (1946) Annual Meeting of the American Society for Testing Materials in Buffalo, June 24 to 28 inclusive, more than 200 meetings of the Society's technical committees are scheduled.

Prefabrication Regulations To Help Speed Building

THE proposed building code regulations covering erection of prefabricated buildings, announced on page 103 of the May issue of INDUSTRIAL STANDARDIZATION, represent one of the recent efforts on the part of building officials to modernize those building laws and regulations which have retarded the adoption of recently developed methods and new materials. The proposed regulations, which are consistent with proposals now being considered by the ASA Sectional Committee on Administrative Requirements for Building Codes, A55, were prepared following a year's study by the prefabrication code subcommittee of the Building Officials Conference of America, Inc. They are in tentative form and will be subject to revision in the light of experience. Copies have been released to building officials in all cities in the country with over 10,000 population, Walker S. Lee, president of the Conference and superintendent of buildings in Rochester, N. Y., announces.

Expected to Serve as Guide For Building Officials

The Building Officials Conference anticipates a considerable amount of prefabricated housing in view of the federal program in proposing guaranteed markets and other inducements to further the veterans' housing program. The code is expected to serve, therefore, as an authoritative guide to local building officials who may be confronted with the problem of screening a wide range in type and quality of prefabricated houses, Mr Lee declares.

"The adoption of the prefabrication regulations by local communities will permit many economies in construction, and at the same time maintain adequate building standards for health and safety," Mr Lee said. "Up to this time, few communities have been prepared to pass on prefabricated dwellings because the specification codes under which most administer local building controls have not provided a basis on which to reconcile new techniques and materials with the conventional house built on the site by the local builder.

"By giving official sanction to new methods and materials, most of which were successfully used in constructing houses and other buildings as part of the war emergency, it will be possible for building officials to help speed the erection of homes for veterans. The new code abolishes obsolete regulations which tend to enhance costs without commensurate advantages to the home owner in safety, comfort, and durability.

"The building officials, through their national conference, have been at work for well over a year in preparing a complete national basic code, of which the prefabrication section is the first to be issued by their executive committee. The Building Officials Conference of America is convinced that the basic code will furnish the impetus to the adoption of modern building regulations by all progressive cities. The basic code will reduce costs, speed up construction, and at the same time insure public safety."

The provisions of the prefabrication code govern the materials and methods of construction of prefabricated buildings, of all uses and occupancies, subassemblies, and units specifically defined in the document, through performance requirements without restrictive barriers to new developments.

It is the intent to permit the use of all materials or methods of construction which meet minimum strength, durability, and fire-resistive requirements, including among others the use of steel, aluminum, magnesium, masonry, asbestos, concrete, wood, molded plywood, synthetic plastics, or any combinations of such materials, the Conference declares.

Standards Provided for Tests of New Materials

Provision is made for the testing and approval of all new materials not specifically provided for, in accordance with standards set up in the prefabrication code.

In the absence of reliable experience records, the building official may require tests to be made on the prefabricated assemblies to determine their durability and weather resistance, or may accept certified reports of recognized testing laboratories and authoritative agencies, the standard provides.

As a part of the national basic code covering all kinds of construction now being prepared by the Conference, the prefabrication code will be a performance code as differentiated from the ordinary specification code.

New "How-to-Do" Section To Be Developed

Since the performance standards of various kinds of buildings and construction remain constant, this "what-to-do" part of the code will be permanent, Mr Lee explains. The second part, or the "how-to-do" section of the code, will deal with construction methods and materials standards which meet the fundamental performance requirements set up in the first part of the code.

The second section will allow the introduction of new materials and methods as they pass the tests specified by the Building Officials Conference, the BOC announces. A system has been developed by the Conference for continuous information service to local building officials covering all new developments and techniques with authoritative recommendations for their use.

Conference Plans Use of American Standards

The basic code of the Building Officials Conference has been in preparation for almost two years. It is understood that wherever possible the Conference plans to use in this basic code, either directly or by reference, the American Standard building code requirements being prepared by ASA committees in the building field.

The prefabrication code has been published at this time to assist local building officials to cope with the emergency problems of the present housing situation and to protect the veterans and others from jerry-type construction. Copies are available from the Building Officials Conference of America, Office of the President, Walker S. Lee, City Hall, Rochester 4, N. Y. Building officials and all others with a direct interest in the prefabrication regulations are invited to send comments and suggestions to the General Chairman, Basic Code Committee, Albert H. Baum, Building Commissioner, 426 City Hall, St. Louis, Mo.

Standard Packaging, Grading Suggested As Benefit to Fruit, Vegetable Growers

WAYS to continue the streamlining of food distribution so that food shoppers obtain fruits and vegetables at reasonable prices while growers receive adequate returns out of the consumers' food dollars were outlined by Earl R. French, national marketing director of the produce-buying affiliate of A & P Food Stores, as his share of a panel discussion in the eighth annual National Farm Institute, February 15 and 16 in Des Moines. Mr French's recommendations included better grading and packing operations, and use of standard packages by farmers.

Asserting that the food shopper ultimately makes the decision on variety, quality, price, and even the details of packaging and volume, Mr French suggested steps which farmers might use in overcoming production inefficiencies. He outlined a program for avoiding postwar maladjustments between supply and demand, and suggested a pattern for remedying marketing inefficiencies which affect growers, distributors, and consumers.

"Less haphazard production of fruits and vegetables," Mr French declared, "would result from adequate market studies to determine which products are in best demand. Another obligation the grower must assume if he competes successfully is to follow through after production. That involves better grading and packing operations, more facilities for pre-cooling, use of clean, standardized containers, and cooperation —even if it is just on a neighborly basis—so that merchandise can be offered in sufficient volume to attract distributors.

"Reduction in waste, estimated currently at 25 to 30 percent of fresh fruits and vegetables somewhere between field and kitchen, would benefit both producer and consumer. The food dollar stretches only so far. If quality can be protected to prevent such losses, then three acres could do the work of four, and a producer would get paid just as much for three hours of farm work as he now receives for four hours."

Mr French's pattern for better marketing procedure suggested to the Institute audience that a well-rounded program be adopted. He recommended adequate grading and packaging, refrigeration—where and when warranted—from farm to market, elimination of unnecessary handling, paring the cost of retailing, an extension of educational work among consumers, and the improvement of merchandising, display, and advertising at retail stores.

Committee Agrees on New Draft Of Proposed Certification Standard

A meeting that has brought the proposed American Standard practice for certification procedures one step nearer completion was held April 26 by the Sectional Committee on Principles Underlying Valid Certification and Labeling of Commodities. The proposed American Standard outlines the principles that should be followed in certifying approval of a product or conformity to accepted standards in order to assure the public of the validity of the certification and maintain public confidence in the labels. The proposed standard has been in circulation for more than a year in order to obtain all possible comment before it is finally adopted.

The meeting April 26 discussed the comments received, which showed widespread approval of the project, and agreed on revisions of the proposed standard, incorporating some of the suggestions received. Emphasis is placed on the provisions that the testing agency on whose tests the endorsement of the product is based shall be independent and competent and that the standard by which the product is judged shall have been framed by a national standardizing organization or developed by some process in which there has been competent consumer, producer, and general interest participation. Approval of a standard for a commodity by the American Standards Association shall be prima facie evidence that it complies with these requirements, it was agreed. The fact that organizations issuing approval labels or certificates have adopted the American Standard for certification procedures will not constitute endorsement of the product by the ASA, however.

Representatives of the Association of Consulting Chemists and Chemical Engineers, the National Bureau of Standards, the American Society for Testing Materials, the Federal Trade Commission, the National Electrical Manufacturers Association, the National Association of Purchasing Agents, and the American Council of Commercial Laboratories attended the meeting.

A new draft of the proposed standard will be considered by the committee at a meeting to be held during the Summer. It is hoped that this will be the final draft and that the proposed standard will then be accepted by the sectional committee and sent to the Standards Council for approval as an American Standard.

New Members of ASA Standards Council

Two new appointments have been made to the Standards Council of the American Standards Association. Albert B. Bingham, divisional director of the Pittsburgh Plate Glass Company, will represent the National Paint, Varnish and Lacquer Association, while Rear Admiral L. C. Stevens, assistant chief of the Bureau of Aeronautics for Research, Development and Engineering, replaces Rear Admiral H. B. Sallada.

Rear Admiral G. H. Rock

Rear Admiral G. H. Rock (USN retired), who in 1929 and 1930 had taken an active part in the work of reorganizing the American Standards Association from a standards coordinating committee to the present association, died in April. Admiral Rock was chief of the Bureau of Structures and Repair (now the Bureau of Ships) during the time he was a member of the Standards Council, 1929 through 1931. As a member of the Committee on Policy and the Committee on Procedure he had an active role in determining the policies to be followed by the new American Standards Association. Admiral Rock retired from the Navy in 1932.

Book Reviews

Recommended Practices for Resistance Welding (American Welding Society, 33 West 39th Street, New York 18, N. Y. 50¢.)

This is a compilation of recommended practices for the spot and seam welding of low-carbon, stainless and hardenable steels, nickel, monel, and inconel; the projection welding of low-carbon and stainless steels; and flash-butt welding low and medium forging strength steels. Standard methods for testing resistance welds are included. Each recommended practice comprises a table of machine settings for current, voltage, time, pressure, and other factors, which will produce welds of specified strength in various thicknesses of materials. An explanatory text on each of the factors is included. The section on standard methods for testing resistance welds covers tests for tensile properties, shear strength, impact strength, fatigue properties, and hardness.

Uniform Building Code. 1946 Edition (Colling Publishing Company, 124 West Fourth Street, Los Angeles 13, California. Cloth bound, $3.00; paper, $2.50.)

This new edition of the Uniform Building Code contains numerous revisions made by the Pacific Coast Building Officials Conference to "answer the insistent public demand for a building code that is modern enough to recognize new materials and elastic enough to permit new uses of old materials".

The revised provisions concern administration, heavy timber construction, masonry, stairs and exits, chimneys, vents, fireplaces, motion picture projection rooms, and heating appliances. Several chapters have been rewritten to conform to modern practice and for the first time a chapter on prefabrication has been incorporated in the Code.

Work on Consumer Standards Scheduled by ASA Committee

THE initiation of several new projects was authorized by the Advisory Committee on Ultimate Consumer Goods of the American Standards Association at a meeting held in the Waldorf-Astoria Hotel, New York, in May. The topics to be considered for development as new standards include women's nylon hose; men's dress shirts; household insecticides, such as DDT and moth preventives; towels and sheets; women's house dresses; and aluminum household cooking utensils.

Before the new committees are organized, subgroups of the Advisory Committee on Ultimate Consumer Goods must investigate whether the associations recommended by the subcommittee on Minimum Peacetime Standards for Consumer Goods are available to serve as sponsors.

The Committee also took action on several other projects by recommending the circulation of letter ballots on three proposed standards which provide definitions for bedding and filling materials of certain types—cotton, wool, and miscellaneous materials, and on approval of a proposed new household project on home and farm freezers. It is hoped that the ASA Sectional Committee on Household Refrigerators, B38, will enlarge its scope to include this project.

A report from the nominating committee disclosed that, by unanimous ballot, the following officers have been elected:

Irwin D. Wolf, Vice President, Kaufmann Department Stores, Inc, representing the National Retail Dry Goods Association, *Chairman*

Dr Dorothy Houghton, Teachers College, Columbia University, representing the American Home Economics Association, *Vice Chairman*

E. M. Edgerton, Pacific Mills, representing the National Association of Finishers of Textile Fabrics, *Executive Committee*

A. D. Egendorf, Director of Merchandise Research, Lit Brothers, representing the National Retail Dry Goods Association, *Executive Committee*

Margaret Scattergood, American Federation of Labor, *Executive Committee*

Dr Faith M. Williams, Consultant on Cost of Living & Standards of Living, Bureau of Labor Statistics, U. S. Department of Labor, representing the American Association of University Women, *Executive Committee*

In keeping with a previous recommendation of the Committee, it was announced that appropriate steps had been taken to transmit the Proposed Project on Testing of Textiles to the United Nations Standards Coordinating Committee for international action.

In order to speed the work on consumer projects, the Committee had suggested that it might take upon itself leadership, or sponsorship, for the work of certain sectional committees. It had asked the Standards Council for authorization to serve as sponsor for any project where sponsors are not available or where its sponsorship would serve to expedite the work of the sectional committee. A reply from the Committee on Procedure of the Standards Council indicated that "if the ACUCG believes that it is particularly well qualified to assume sponsorship for a particular project, or believes an interest could be served by such action, it should report this intention to the Standards Council and receive definite approval of the assignment. Upon completion of the technical work and the transmission of a standard developed by a sectional committee under ACUCG sponsorship to the ASA for approval, the record in regard to the development of the standard would be transmitted to the Board of Examination for final recommendations to the Standards Council. In this way, the ACUCG would exercise only the administrative functions of the sponsor, and its judicial functions as a reviewing agency on behalf of the Council would be carried forward by the Board of Examination."

The disposition of the War Project on Women's Industrial Clothing, L17, provoked much discussion. It was finally agreed to refer the project to a sectional committee for study and revision, under the guidance of the original subcommittee which reported on the project.

The Bureau of Labor Statistics of the U. S. Department of Labor is acting as sponsor of a new sectional committee on Definitions of Terms Used in Retailing. Mrs Hoover, the Bureau's representative, reported that the committee is already at work assembling those definitions which are now in existence in the trade.

—New Standards in ASA Library—

For the information of ASA Members, the American Standards Association publishes a selected list of standards as they are received by the ASA Library. The list below includes only those standards received recently which the ASA believes are of greatest interest to Members.

These standards may be consulted by Members at the ASA Library, or copies may be obtained from the organization issuing the standard. The address of the organization is included for convenience in ordering.

Associations and Technical Societies

American Society for Testing Materials (1916 Race Street, Philadelphia 3, Pa.)

As a service to Company Members, the ASA maintains a sale file of all ASTM standards. They can be purchased from the ASA Sales Department at 25 cents each except where otherwise noted.

ASTM Standards

Carbonizable Substances in Paraffin Wax, Method of Test for, D612-45

Carbonizable Substances in White Mineral Oil (Liquid Petrolatum), Method of Test for, D565-45

Chemical Analysis of Industrial Metal Cleaning Compositions, Methods of, D800-45

Chemical Analysis of Sulfonated and Sulfated Oils, Methods of, D500-45

Copper-Base Alloy Forging Rods, Bars, and Shapes, Specifications for, B124-45

Copper Water Tube, Specifications for, B88-45

Descriptive Nomenclature of Objects Made from Plastics, D675-45

Flash and Fire Points by Means of Open Cup, Method of Test for, D92-45

Free-Cutting Brass Rod and Bar for Use in Screw Machines, Specifications for, B16-45

Knock Characteristics of Motor Fuels, Method of Test for, D357-45

Liquid Toilet Soap, Specifications for, D799-45

Saponification Number of Petroleum Products by Color-Indicator Titration, Method of Test for, D94-45

Surface Wettability of Paper (Angle-of-Contact Method), Method of Test for, D724-45

Terms Relating to Textile Materials, Definitions of, D123-45

Testing Flexible Varnished Tubing Used for Electrical Insulation, Methods of, D350-45

Tetrasodium Pyrophosphate (Anhydrous), Specifications for, D595-45

Textile Testing Machines, Specifications for, D76-45

Welded Wrought-Iron Pipe, Specifications for, A72-45

Workability Index of Fireclay Plastic Refractories, Method of Test for, C181-45

ASTM Tentatives

Acid Wash Color of Benzene, Toluene, Xylenes, and Similar Industrial Aromatic Hydrocarbons, Method of Test for, D848-45T

Air Content of Portland-Cement Mortar, Method of Test for, C185-46T

Air-Entraining Portland Cement, Specifications for, C175-46T

Alloy-Steel Bolting Materials for High-Temperature Service, Specifications for, A193-45T

Ammonia in Phenol-Formaldehyde Molded Materials, Method of Test for, D834-45T

Asphalt Roofing Surfaced with Coarse Mineral Granules, Specifications for, D249-45T, (with Emergency Alternate Provisions EA-D249b)

Cellulose Acetate Plastic Sheets, Specifications for, D786-45T

Chemical Analysis of Soaps Containing Synthetic Detergents, Methods of, D820-45T

Chromate Finishes on Electrodeposited Zinc, Hot-Dipped Galvanized, and Zinc Die-Cast Surfaces, Specifications for, B201-45T

Chromium Plating on Steel for Engineering Use, Recommended Practice for, B177-45T

Coefficient of Cubical Thermal Expansion of Plastics, Method of Test for, D864-45T

Color of Lubricating Oil and Petrolatum by Means of ASTM Union Colorimeter, Method of Test for, D155-45T

Colorfastness of Plastics to Light, Method of Test for, D620-45T

Conditioning Plastics and Electrical Insulating Materials for Testing, Method for, D618-45T

Designating the Flow Temperature of Thermoplastic Molding Materials, Method of, D863-45T

Distillation of Industrial Aromatic Hydrocarbons, Method of Test for, D850-45T

Electrodeposited Coatings of Lead on Steel, Specifications for, B200-45T

End-Quench Test for Hardenability of Steel, Method of, A255-45T

Evaluating Treated Textiles for Permanence of Resistance to Microorganisms, Methods of Test for, D862-45T

Flexible Treated Cotton and Rayon Sleeving Used in Electrical Insulation, Specifications for, D372-45T

Flexural Test of Plastics, Method of, D790-45T

Foundry Pig Iron, Specifications for, A43-45T

Gas Content of Insulating Oils, Methods of Test for, D831-45T

Haze of Transparent Plastics by Photoelectric Cell, Method of Test for, D672-45T

Heat Distortion Temperature of Plastics, Method of Test for, D648-45T

High-Strength Steel Castings for Structural Purposes, Specifications for, A282-45T

Industrial Radiographic Terminology for Use in Radiographic Inspection of Castings and Weldments, E52-45T

Magnesium-Base Alloy Bars, Rods, and Shapes, Specifications for, B107-45T

Magnesium-Base Alloy Forgings, Specifications for, B91-45T

Magnesium-Base Alloy Sand Castings, Specifications for B80-45T

Magnesium-Base Alloy Sheet, Specifications for, B90-45T

Magnesium-Base Alloys in Ingot Form for Sand Castings, Die Castings, and Permanent Mold Castings, Specifications for, B93-45T

Metal Powder Sintered Bearings (Oil Impregnated), Specifications for, B202-45T

Mild to Medium-Strength Carbon-Steel Castings for General Application, Specifications for, A281-45T

Molding Specimens of Phenolic Materials, Recommended Practice for, D796-45T

Natural Block Mica and Mica Films Suitable for Use in Fixed Mica-Dielectric Capacitors, Specifications for, D748-45T

Sampling and Testing Untreated Paper Used in Electrical Insulation, Methods of, D202-45T

Seamless Carbon-Steel Pipe for High-Temperature Service, Specifications for, A106-45T

Seamless Chromium-Molybdenum Alloy-Steel Pipe for Service at High Temperatures, Specifications for, A280-46T

Solidifying Point of Benzene, Method of of Test for, D852-45T

Specific Gravity of Soils, Method of Test for, D854-45T

Terms Relating to Soaps and Other Detergents, Definitions of, D459-45T

Testing Molded Materials Used for Electrical Insulation, Methods of, D48-45T

U.S. Government

Wherever a price is indicated, the publication may be secured from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. In other cases, copies may be obtained from the government agency concerned.

National Bureau of Standards

List of Commercial Standards, Revised to January 1, 1946, Letter Circular LC815, Supersedes LC803

List of Published Material Relating to Home Building and Maintenance, October 24, 1945, LC805

Publications Relating to Building Codes and Construction Practice Home Building—Building Material Specifications—Home Maintenance, Revised to November 21, 1945, LC811, Supersedes LC796

Simplified Practice Recommendation, (Alphabetical List), Revised to February 1, 1946, LC816, Supersedes LC794

Standards and Specifications for Building and Construction Materials, Fixtures, Supplies, and Equipment, Revised to November 7, 1945, LC808, Supersedes LC619

Commercial Standards

Men's Sport-Shirt Sizes—Woven Fabrics, (Other than those marked with regular neck-band sizes), Commercial Standard CS128-45, 5¢

Old Growth Douglas Fir Standard Stock Doors, (Third Edition), Commercial Standard CS73-45, 10¢

Simplified Practice Recommendations

Files, American Pattern and Milled (Curved-Tooth); and Rasps, Simplified Practice Recommendation R6-45

Specification Division U. S. Treasury Department, Washington 25, D. C.

Federal Specifications are prepared for use by all government departments and establishments in their purchases. Copies are available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 5 cents each. Requests should be accompanied by cash, check, or money order.

As a service to Company Members, the ASA maintains a sale file of all Federal Specifications. These specifications can be purchased from the ASA Sales Department.

Federal Specifications

Aggregate; (For) Portland-Cement-Concrete (Superseding Amendment-1), (Amendment 2), SS-A-281a, February 1946

Aluminum-Pigment; Powder and Paste (For) Paint (Superseding Amendment 1), (Amendment 2), TT-A-468, February 1946

Boxes; Fiber, Corrugated (For Domestic Shipment) (Superseding Federal Specification LLL-B-631a and Emer Alt Fed Spec E-LLL-B-631a, 7-7-43), LLL-B-631b, January 1946

Boxes; Fiber, Solid (For Domestic Shipment) (Superseding Fed Spec LLL-B-636a and Emer Alt Fed Spec E-LLL-B-636a, 2-11-42), LLL-B-636b, February 1946

Brass; Anodes, QQ-B-591, February 1946

Bronze, Phosphor; Bars, Plates, Rods, Shapes, Sheets, and Strips (Superseding Fed Spec QQ-B-746), QQ-B-746a, February 1946

Cable and Wire; Rubber-Insulated, Building-Type (0 to 5000 Volt Service) (Superseding Amendment 2), (Amendment 3), J-C-103, February 1946

Calipers; Jointed (Lock, Spring, and Firm) and Slide, GGG-C-98, February 1946

Countersinks; Steel (Carbon and High-Speed), GGG-C-613, December 1945

Detergents, Special; (For Aluminumware, Dishwashing-machines, and Manual Cleaning) (Superseding Amendment 3), (Amendment 4), P-D-236, February 1946

Fire-Alarm-Systems; Electric, Manual, Coded, Positive Noninterfering-Type (Superseding Federal Specification W-F-391), W-F-391a, February 1946

Federal Specifications—Continued

Fire-Alarm-Systems; Electric, Manual, Coded, Shunt Noninterfering-Type (Superseding Federal Specification W-F-396), W-F-396a, February 1946

Grinders; Valve-Seat, Engine (Motor-Vehicle), W-G-671, February 1946

Handles, Hickory; Striking-Tool (Superseding Amendment 2), (Amendment 3), NN-H-93, February 1946

Holders; X-Ray-Film Exposure, GG-H-603, February 1946

Paint; Primer-Sealer, (For) Plaster and Wallboard (Superseding Fed Spec TT-P-56), TT-P-56a, February 1946

Receptacles, Flashlight-Cell; With Rheostat, W-R-161, February 1946

Soap; Grit, Hand, Cake (Superseding Fed Spec P-S-576), P-S-576a, February 1946

Soap-Powder (Superseding Amendment 3), (Amendment 4), P-S-606a, February 1946

Textiles; General Specifications, Test Methods (Superseding Amendment 1), (Amendment 2), CCC-T-191a, February 1946

Traps; Radiator, Thermostatic, Brass or Bronze, Low-Pressure, 100-Square-Foot-Size (For Land Use) (Superseding Amendment 2), (Amendment 3), WW-T-696, February 1946

NBS Acts on Standards and Simplified Practice Recommendations

Simplified Practice Recommendations

Announced by the Division of Simplified Practice, National Bureau of Standards

Bronze and Brass Valves, Revision of Simplified Practice Recommendation R183-42—

The standing committee in charge of reviewing and revising Simplified Practice Recommendation R183-42, Bronze or Brass Valves, has approved a revision of the recommendation and it is now being circulated to all interests for approval.

The original recommendation became effective January 1, 1942, and subsequently served as the basis for mandatory orders issued by the War Production Board. These orders have since been revoked. The purpose of the present proposed revision is to retain the original recommendation and to include those features of the wartime order which the industry found to be of most benefit to all concerned.

The proposed revision applies to gate, globe, angle, and check valves made of bronze or brass for primary pressures ranging from 100 to 350 pounds, and 1000 to 2000 pressures for water, oil, and gas. A simplified range of sizes is given for the various types and kinds of valves for each of the pressure ratings.

Carbon Steel Plate and Structural Shapes—

According to this proposed recommendation, thickness of carbon steel plate may be specified in either of two ways: by measurement in inches, as given in List 1, which ranges from 3/16 inch to 2 inches, inclusive; or by weight per square foot, as shown in List 2, commencing with 7.65 pounds and ending with 81.60 pounds. Plates from 2 inches to 6 inches thick progress in increments of ⅛ inch. Those over 6 inches thick advance in quarter inches. It is expected that general adherence to the recommendation will result in continuation of the reduced number of thicknesses; more efficient mill operation; expeditious delivery; reduction in inventories; improved service to users; and more economical manufacture. The recommendation was proposed by the Technical Committee on Carbon Steel Plate of the American Iron and Steel Institute.

Cast-Iron Radiators, Proposed Revision of R174-43—

The original recommendation was promulgated in 1940 and revised in 1941. Both of these issues listed large-tube cast-iron radiators only. In 1942, the War Production Board issued an order prohibiting the manufacture of large-tube radiators, and the recommendation was again revised to bring it in line with the order, which permitted only small-tube radiators. The revision now proposed retains all but one of the sizes of small-tube radiators and adds a stock assembly schedule of these radiators.

Copper Water Tube and Copper and Brass Pipe—

A proposed Simplified Practice Recommendation for Copper Water Tube and Copper and Brass Pipe has been submitted to producers, distributors, and users for comment or acceptance, or both. This recommendation covers copper water tube and copper and brass pipe intended for plumbing uses. Its purpose is to establish, as a useful standard of practice in the production, distribution, and use of these items, a simplified list of types and sizes.

Dental Excavating Burs, Proposed Revision of R195-42—

Under the original recommendation, which was issued in June 1941, industry was requested to reduce the standard bur numbers from 75 to 18, a decrease of 76 percent. The simplified list was then made a mandatory order by the War Production Board, and remained in effect until it was revoked in August 1945.

ASA Standards Activities

Commercial Standards

Announced by the Division of Trade Standards, National Bureau of Standards

Materials for Safety Wearing Apparel, CS129-46—

Effective for new production from May 6, 1946 is a Commercial Standard for Materials for Safety Wearing Apparel. Its purpose is to *(a)* provide protection to the wearer of safety wearing apparel through the establishment of standard minimum quality requirements and methods of test for the material used in the manufacture of such apparel, including asbestos fabrics, flame-resistant cotton fabrics, leather, woolen fabrics, and accessory materials; *(b)* serve as a basis for fair competition between manufacturers; and *(c)* provide a foundation for guaranteeing the quality of the materials used in the manufacture of the product.

Men's and Boys' Woven Shorts, Recommended Commercial Standard TS-4104—

Pursuant to a request from the Underwear Institute, this Proposed Commercial Standard is being circulated for acceptance. Its scope covers methods of measuring and standard minimum measurements for boys' shorts and for men's panel back and center seam back shorts, made from woven fabrics. It also includes a recommended label for guaranteeing conformity to the standard. The methods and measurements given herein are applicable to finished garments as delivered by the manufacturer.

Sizing of Apparel for Girls, Recommended Commercial Standard TS-4093—

Under consideration by the industry concerned is a Recommended Commercial Standard on Body Measurements for the Sizing of Apparel for Girls. Originally proposed by the Mail Order Association of America, its purpose is to establish standard size designations and body measurements for girls' ready-to-wear apparel to serve as a guide for those engaged in producing, or preparing specifications for, ready-to-wear garments and patterns. It also hopes to provide lengths for dresses, coats, skirts, and slacks (outseams) which are related to the body measurements. Specifically, the standard covers classification and size range for girls—in sizes from 7 to 14; size designations; body measurements of girls for "regular" sizes from a stature of 50 inches and a weight of 58 pounds up to a stature of 61 inches and a weight of 104 pounds; length of garments related to body measurements; methods of measuring—general, vertical, girth, width and length, garment lengths; relationship of stature measurements to the sizing system; recommended methods of certification and labeling; and explanation of adjustments made in body measurements.

American Standards

American Standards Approved Since Our May Issue

Drawings and Drafting Room Practice, Z14.1-1946 (Revision of Z14.1-1935)
Sponsors: American Society of Mechanical Engineers; Society for the Promotion of Engineering Education

Life Tests of Single-Point Tools Made of Materials Other Than Sintered Carbides, B5.19-1946
Sponsors: American Society of Mechanical Engineers; National Machine Tool Builders' Association; Society of Automotive Engineers, Inc

Standards Being Considered by ASA for Approval

Building Code Requirements for Grandstands, Tents, and Other Places of Outdoor Assembly, Z20.2
Sponsors: Building Officials Conference of America, Inc; National Fire Protection Association

Building Code Requirements for Light and Ventilation, A53
Endorsing Sponsor: U. S. Public Health Service

Building Code Requirements for Reinforced Concrete, A89 (ACI 318-41)
Sponsor: American Concrete Institute

Motion Picture Photography
Sponsor: Society of Motion Picture Engineers

Theater Projection Rooms (Revision of American Recommended Practice Z22.28-1941 to be designated as American Standard Practice for Projection Rooms and Lenses for Motion Picture Theaters, Z22.28)

Theater Projection Screens (Revision of American Recommended Practice Z22.29-1941 to be designated as American Standard Dimensions of Theater Projection Screens, Z22.29)

Safety Film (Revision of American Recommended Practice Z22.31-1941 to be designated as American Standard Practice for Motion Picture Safety Film, Z22.31)

Construction and Maintenance of Ladders and Stairs for Mines, M12.1 (Revision of American Tentative Standard on Construction and Maintenance of Ladders and Stairs for Mines, M12-1928)
Sponsor: American Mining Congress

Standard Submitted to ASA for Approval

Specifications for Gypsum Plastering, A42.1 (Revision of American Standard Specifications for Gypsum Plastering, A42.1-1942)
Sponsors: American Institute of Architects; American Society for Testing Materials

New Projects Being Considered

Identification and Cataloging of Antifriction Bearings
Standards for Home and Farm Freezers

New Project Requested

Standards for a State Electrical Inspection Law and Municipal Electrical Inspection Ordinance

American War Standards

War Standards Under Way

Allowable Concentration of Trichloroethylene, Z37
Radio Noise, Methods of Measuring, C63
Interference Measurement, Radio, Methods of,
150 Kilocycles to 20 Megacycles (for Components and Complete Assemblies) (JAN-I-225)
Screw Threads, B1
Buttress Threads
High-Duty Studs in Light Alloys
Instrument Threads
Stub Acme Threads
Unification of Screw Threads
Women's Industrial Clothing, L17
Jackets for Outdoor Wear (Slide Fastener Closure), L17.6
Jackets for Outdoor Wear (Fly-Type Button Closure), L17.5
Wood Poles, O5
Ultimate Fiber Stresses of Wood Poles, O5aWS

Approval Withdrawn

Approval Requirements for Domestic Gas Ranges, Z21.1-ES-1942
Approval Requirements for Gas Water Heaters, Z21.10-WS-1942

News About ASA Projects

Grandstands, Tents, and Other Places of Outdoor Assembly, Z20.2—

Sponsors: Building Officials Conference of America, Inc; National Fire Protection Association.

In response to a widespread public demand for fire safety standards for grandstands, tents, and other places of outdoor assembly due to the tragic circus fire in Hartford, Conn., on July 6, 1944, a safety standard for baseball parks, race tracks, county fairs, rodeos, circuses, and other places of outdoor meeting has been prepared. At the request of the Building Officials Conference of America, a sectional committee was organized under the procedure of the American Standards Association with the National Fire Protection Association and the Building Officials Conference of America as sponsors. This committee included prominent figures in the outdoor entertainment world, government officials, fire protection engineers, and

police and fire authorities. The request for the project was the result of the Hartford disaster which revealed the absence of safety regulations for places of outdoor assembly similar to those provided for theatres and halls by state and municipal building codes and other regulations. Among the safety features stressed in the proposed new standard are construction and capacity of grandstands; location and flameproofing of tents; adequate exits and lighting for all places of outdoor assembly; and fire protection measures necessary to prevent repetition of such tragedies as the Hartford circus fire. An advance copy of the proposed standard has been prepared by the National Fire Protection Association and is available from the NFPA, 60 Batterymarch Street, Boston, at 25 cents per copy. When approved as an American Standard, copies will be available from the American Standards Association in the format of the American Standard Building Requirements.

Safety in Electric and Gas Welding and Cutting Operations, Z49—

This new project, approved last month by the ASA Standards Council, is now going forward with the American Welding Society as sponsor. The scope of the work to be undertaken is defined as: "Protection of workers from accidents, occupational diseases, and fires arising out of the installation, operation, and maintenance of electric and gas welding and cutting equipment."

Screw Threads, B1—

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers.

Buttress, Acme, and Truncated Whitworth Threads—

As a result of the Ottawa conference in the fall of 1945, revisions of proposed American War Standards for Buttress Threads, Stub Acme Threads, and Truncated Whitworth Threads have been prepared and are now before the ASA War Committee for approval. It is planned that after approval by the War Committee the drafts, with the exception of the draft on Truncated Whitworth Threads, will be turned over to the Sectional Committee on Screw Threads, B1, to serve as the basis for the establishment of American Standards.

Instrument Screw Threads—

The ASA Subcommittee on Instrument Screw Threads has under consideration a series of proposed tables of limiting dimensions for screw threads of series 30 NHS to 90 NHS (sizes 0.30 to 0.90 mm, or 0.0118 to 0.0354 in.) and 039 to 079 (sizes 1.0 to 2.0 mm, or 0.0394 to 0.0787 in.). These threads are intended for small fastening screws widely used in the manufacture of watches, clocks, and electrical and other instruments.

Unification of Screw Threads—

The unification of screw threads has been taken up by a subcommittee of Sectional Committee B1. This subcommittee met in Detroit on April 8 and made the following recommendations:

(1) That, whereas it has been found that the flank engagement according to the recommendations made at Ottawa may, as a result of application of normal tolerances, be as little as 37 percent, which is considered too low for adequate strength, the committee consider the adoption of the basic ABC thread form with the understanding that the crest be as now shown for the alternative truncated crest and the root be rounded to the 0.144p radius; that the crest be permitted to vary up to a minimum of a p/8 flat; that the root may be permitted to vary down to a p/8 flat; and that the contour of the crest and root be permitted to have any shape within the boundary limits so prescribed.

(2) That any new thread series include the American Standard numbered sizes 0-80, 1-72, and 1-64; and that the nominal diameter 0.216 inch of the American Standard numbered sizes 12-24 and 12-28 be retained.

(3) That the adoption of 12 threads per inch for the ½ inch coarse, and 1 inch fine threads be given further study.

These recommendations were presented to Sectional Committee B1 at its meeting April 9 and accepted by a unanimous vote.

Nomenclature, Definitions, and Letter Symbols—

The ASA War Subcommittee on Nomenclature, Definitions, and Letter Symbols for Screw Threads also held a meeting in Detroit on April 8, where it practically completed its work. At the meeting of the sectional committee on April 9 this subcommittee reported that a final proposal would be circulated soon for comment and criticism. It is intended that the nomenclature, definitions, and symbols on which agreement is reached will be used in future revisions of all the screw thread standards.

Screw Threads with an Allowance—

A new subcommittee of Sectional Committee B1, on Screw Threads with an Allowance, met in Detroit April 8. This new subcommittee was organized as a result of a request from industry that Sectional Committee B1 consider the establishment of a new class of fit with a pitch diameter allowance. Such an allowance may be necessary either with a view to assembly by means of high-cycle wrenching or to permit plating of one or both mating parts without getting too tight a fit when they are assembled.

A proposed table of allowances and tolerances for threads with 80 to 18 threads per inch was adopted by the subcommittee, submitted to Sectional Committee B1, and accepted. It was decided that a study should now be made of limiting dimensions for internal threads and, further, that the new class of fit would be tentatively designated as a Class A fit. It was also agreed that it would be decided later what relation this new class of fit would have to the classes of fit specified in the present American Standard for Screw Threads, B1.1-1935, and more particularly whether it should supplement or replace the existing classes. Sectional Committee B1 decided that it should be determined whether the Class A fit can be used as a general-purpose fit for the majority of commercial products, such as bolts and nuts. While work on the Class A fit is continued, the revision of American Standard B1.1-1935 will be taken up independently. It has been suggested that a separate American Standard completely covering commercial bolts and nuts be developed. This would also involve the Sectional Committee on Bolt, Nut, and Rivet Proportions, B18.

Safety Glass, Z26—

Sponsors: National Bureau of Standards, U. S. Department of Commerce; National Conservation Bureau

It has been agreed that there should be a revision of the 1938 edition of the American Standard for safety glass to bring it up to date with developments in the industry and possibly to include requirements for the use of plastics. A meeting was held April 22 and the attention of the committee was called to a report on research carried out by a subcommittee in 1939, 1940, and 1941. The report was based on tests made at the Ford Motor Company plant in Dearborn, Michigan, at the Libbey-Owens-Ford Glass Company in Toledo, Ohio, and by the National Bureau of Standards. The subcommittee had done a great deal of work as a basis for the report although it had made no recommendations. At its meeting April 22, the sectional committee decided that a subcommittee should be named to review the work that had been done and to consider whether plastics would be suitable for use in glazing motor vehicles. The subcommittee was instructed to bring in a report as to what the next step should be. It was reported that there has been a great deal of work on plastics and that the Society of Automotive Engineers has been studying the subject for some time. Motion pictures of plastic breaking under various conditions were shown to the committee.

Standards for a State Electrical Inspection Law and Municipal Electrical Inspection Ordinance—

A request for a new project that would give the user, the manufacturer, the installer, and the power supplier a voice in preparing a model, nationally acceptable law and ordinance for inspection of electrical equipment and installations was presented last month to the American Standards Association by the National Electrical Manufacturers Association. Electrical inspection laws, the request points out, are based on the fundamental principle that electrical products must be so constructed, installed, and used that they are free from fire and personal hazards under the conditions of use. In the public interest, uniform requirements throughout the country are essential to assure the economic advantages of mass production and unhampered nationwide distribution of standard electrical devices and equipment, NEMA declares. For many years NEMA has been working on this problem to persuade local authorities that it is not in the public interest to set up local ordinances more restrictive than the National Electrical Code or the requirements of Underwriters' Laboratories. It now suggests that a model state law and ordinance be prepared by a nationally representative sectional committee for approval as American Standards. A proposed State Law Providing for the Inspection of Electrical Installations prepared by a NEMA committee has been submitted to ASA for possible consideration by a sectional committee should the project be organized.

Promote Better Understanding!

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Six American Standards are now available for graphical symbols used in drawings for mechanical engineering, electrical engineering, welding, and for electric power and control. They were prepared by a nationally representative committee of engineers, editors, and government representatives, sponsored by the American Institute of Electrical Engineers and the American Society of Mechanical Engineers.

American Standard Graphical Symbols for Use on Drawings in Welding and Instructions for Their Use, Z32.1-1942 — 25¢

American Standard Graphical Symbols for Use on Drawings in Mechanical Engineering, Z32.2-1941 — 50¢

American Standard Graphical Symbols for Electric Power and Control, Z32.3-1946 — 40¢

American Standard Graphical Symbols for Telephone, Telegraph, and Radio Use, Z32.5-1944 — 30¢

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